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# The relationship between home environment and reading achievement among Filipino-American grade three and grade five pupils

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# THE RELATIONSHIP BETWEEN HOME ENVIRONMENT AND READING ACHIEVEMENT AMONG FILIPINO-AMERICAN GRADE THREE AND GRADE FIVE PUPILS

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by

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# THE RELATIONSHIP BETWEEN HOME ENVIRONMENT AND READING ACHIEVEMENT AMONG FILIPINO-AMERICAN THIRD-GRADE AND FIFTH-GRADE PUPILS


## Abstract of Dissertation

Purpose: This research study was designed to investigate the relationship between educational environment in the home and reading achievement of 48 third-grade and 48 fifth-grade Filipino-American children attending Stockton Unified School District during the 1977-78 school year. A secondary purpose was to examine the social correlates of reading achievement such as socio-economic status (SES), parents' educational level (PEL), parents' generational status (PGS), and sex.

Hypotheses: Eight null hypotheses were tested. The four major hypotheses pertained to the environmental process variables as they relate to reading achievement. Hypotheses 1 and 2 predicted lack of relationship between the Index of Educational Environment and reading achievement in Grades 3 and 5, respectively. Hypothesis 3 compared the educational environment in the homes of the third-grade and the fifth-grade samples. Hypothesis 4 tested for significant differences between the Grade 3 and the Grade 5 home environment-reading achievement correlations. The four ancillary hypotheses predicted non-significance in the relationship between reading achievement and each of the following demographic variables: SES, PEL, PGS, and sex.

Procedures: Ratings on the 6 environmental process variables included in Dave's Parent Interview and Rating Scales were combined to yield a single indicator of the home environment - the Index of Educational Environment (IEE). Reading achievement was indicated by standard scores obtained on the Metropolitan Achievement Tests. SES was computed using Warner's Index of Social Characteristics. The demographic data were furnished by the parents through information sheets and during the home interviews. The Pearson Product-Moment procedure and the Analysis of Variance were the statistical methods used and the .10 level was chosen to establish statistical significance.

Findings: High correlational data for both third and fifth grades substantially support the anticipated relationship between reading achievement and home environment. No significant difference between the educational environments in the home of the two sets of subjects was found but the correlation between IEE and reading achievement for the third grade varied significantly from that for the higher grade. SES, PEL, and sex, while found to be significantly related to reading achievement for the Grade 5 sample, did not reach statistical significance for the other grade, However, when the effects of home environment (IEE) were partialled out, the variables assumed positive correlations with reading achievement. The findings underscore the important influence of home environment on school achievement. IEE correlated more positively with reading achievement than any of the demographic variables. Furthermore, the IEE scores were high enough to compensate for the negative effects of SES and PEL in the third grade.

Recommendations: Implications for the school and the home are obvious. Because many of the environmental variables seem educationally malleable, schools should develop programs to assist parents in improving home stimulation and in strengthening the educational climate in the home. Additionally, they must provide a full range of appropriate curricular experiences to children whose home environments are less than substantial. Further research should investigate the home environment of preschoolers as well as high school students and should sample a wider range of ethnic groups and social classes. More environmental measures should be developed and the existing ones refined in order to be more efficient and less time consuming.

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# Chapter I

## NATURE AND SCOPE OF THE PROBLEM

### Introduction

Educators have long recognized that the home environment of the child plays an important role in his educational growth and development. From among the many institutions in the child's environment, Leahy views the home as the most important for it is the home that affects the child's behavior most continuously.[1] The home, according to Dave, "produces the first, most insistent, and perhaps, most subtle influence on the educational development of the child."[2]

Results of recent research studies on the availability of equal educational opportunities as well as on the outcomes of schooling point out a fact of which educators and parents are well aware: that differences in educational achievement do exist. But national and international studies also give a clearer indication of the

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[1]Alice M. Leahy, The Measurement of Urban Home Environment (Minneapolis: University of Minnesota Press, 1936), p. 2.

[2]Ravindrakumar H. Dave, "The Identification and Measurement of Environmental Variables that are Related to Educational Achievement," (unpublished Doctoral dissertation, University of Chicago, 1963), p. 4.

degree and the extent of the disparity. They support the contention that the disparity in achievement is not primarily attributable to the conditions and facilities found in schools and that academic achievement significantly relates to the child's home environment.

In analyzing the achievement levels of young Americans in seven academic areas, the National Assessment of Educational Progress (NAEP) underscores the significance of home and community inputs as strong predictors of student achievement. A definite pattern of achievement was connected to the educational level of the parents and to the size and type of community in which they reside. In general, individuals whose parents had little formal education and came from the inner cities and rural areas had levels of achievement below the rest of the nation while those who came from well-educated families and lived in affluent suburbs typically performed well above the national levels.[3]

Among the central conclusions presented by Coleman in his noted Equality of Educational Opportunity Report (EEOR) are the following:

1. Family background has great bearing on school achievement;

2. The relation of family background to achievement does not diminish over the years of schooling; and

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[3]Simon S. Johnson, Update on Education, NAEP (Denver: The Education Commision of the States, 1975), pp. 2-23.

3. Family background accounts for a substantial amount of the school-to-school variation in achievement, thus allowing for only a small independent effect of variations in school facilities, curriculum, and staff.[4]

The unexpected findings in the EEOR invited skepticism as to their validity and prompted a reassessment of the original data at a faculty seminar at Harvard University. After three years of intensive study, most of the original analyses were revised but the essential conclusion remained: that the determinants of the variation in student achievement are more likely to be found in the home rather than in the school.[5]

That the effects of environment, especially the student's home and family background, are of critical importance in school achievement is one of the two main findings in an international investigation of reading comprehension conducted in fifteen countries by the International Association for the Evaluation of Educational Achievement (IEA). Thorndike, chairman of the Reading Committee, elaborates:

> A dominant determiner of the outcome from a school in terms of reading performance is the input in terms of the kinds of students that go to the school. When the population of a school comes from

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[4]James Coleman, et al., Equality of Educational Opportunity (Washington, D. C.: Superintendent of Public Documents, 1966), p. 325.

[5]Frederick Mosteller and Daniel Moynihan, eds., On Equality of Educational Opportunity (New York: Random House, 1972).

> homes in which the parents are themselves well-educated, economically advantaged, and able to provide an environment in which reading materials and communication media are available, the school shows a generally superior level of reading achievement.[6]

Results of such studies, the increasing diversity of the school population in terms of ethnic and socio-economic composition, and the growing concern regarding the acquisition of basic academic skills all seem to justify the need to probe into a more pervasive learning environment that goes beyond the confines of the school and into the homes and community of school children. The home environment of many ethnic minority children remains to be explored. The purpose of this study was to investigate the factors in the home environment of Filipino-American third-grade and fifth-grade pupils in the Stockton Unified School District in order to determine whether these factors relate to reading achievement.

## Background of the Study

Most studies relating the home background of the child to his school performance involve measures of home environment consisting largely of "static" variables--those factors that tend to describe the home by simply categorizing and classifying families and homes according to social class and economic status. In a study by Callaway, Jerrolds, and

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[6]Robert L. Thorndike, Reading Comprehension Education in Fifteen Countries, International Studies in Evaluation III (New York: John Wiley & Sons, 1973), p. 177.

Gwaltney one variable that was found to be related to language and reading scores was family income.[7] A significant correlation was also found in the occupation of the principal wage earner.

Even when these "static" variables did establish significant relationships with educational achievement and have been of beneficially predictive value in many areas, they have nonetheless been found inadequate as measures of environment if we define environment as Bloom has--the totality of forces and conditions that impinge on and shape the behavior of the individual. Bloom conceives of a range of environments from the most immediate social interactions to the more remote cultural and institutional forces.[8] The community, the school, the home, and the peer group are a series of sub-environments of the total environment that act upon the individual. Even the home is comprised of many environments, each of which is composed of a unique set of dynamic forces shaping and influencing one's behavior. This conception of the environment led researchers to consider the educational dimension of the home environment as having a powerful influence on the educational behavior of the child

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[7]Byron Callaway et al., "The Relationship Between Reading and Language Achievement and Certain Sociological and Adjustment Factors," Reading Improvement, Vol. 11, No. 1 (Spring, 1974), 19-26.

[8]Benjamin S. Bloom, Stability and Change in Human Characteristics (New York: John Wiley & Sons, Inc., 1964), p. 186.

and paved the way for the inclusion of "process variables" as home environmental measures in later studies, notably those by Dave[9] and Wolf.[10] These researchers identified process variables as those conditions and processes in the home environment that explore interactions between parent and child and more precisely portray the educational environment of the home in terms of:

1. the climate created for achievement motivation,
2. the opportunities provided for verbal development,
3. the nature and amount of assistance provided in overcoming academic difficulties,
4. the activity level of the significant individuals in the environment,
5. the level of intellectuality in the environment, and
6. the kinds of work habits that are expected of the individual.[11]

These process variables were believed to describe more fully and accurately the home conditions relevant to

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[9]Dave, op. cit.

[10]Richard Wolf, "The Identification and Measurement of Environmental Process Variables Related to Intelligence" (unpublished Doctoral dissertation, University of Chicago, 1964).

[11]Richard Wolf, "The Measurement of Environment," Testing Problems in Perspective, Anna Anastasi (ed.) (Washington, D. C.: American Council of Education, 1966), p. 494.

learning and better educational behavior. Wolf obtained a correlation of $r$ = .69 between educational environment and student intelligence, while Dave found a $r$ = .80 correlation between similar measures of home environment and student achievement. Using a sample from the rural area, McGuirk replicated most of Dave's study, and comparing his results with Dave's (whose sample came from urban Chicago), concluded that there is a significant correlation between educational environment in the home and student achievement in both Grades Five and Seven.[12]

The main thrust of this study will be toward those aspects of the home which are seen to constitute the educational environment. Additionally, however, measures using static variables will be included as a cross-check and as a tool for relating current findings to previous studies.

## The Problem

Filipino-American children comprise an increasing percentage of the student population in many California schools today. The years subsequent to 1965, when the new liberalized Immigration Law was passed, have witnessed a steady influx of immigrants from the Philippines. Their

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[12]Leo McGuirk, "A Study of the Relationship Between the Educational Environment of the Home and Student Achievement at Two Different Grade Levels" (unpublished Doctoral dissertation, Boston College, 1973).

number swelled from 61,600 in 1950 to 241,000 in 1970. Compared to the earlier immigrants, the more recent arrivals were better educated and had a wider range of interests and skills. Many established themselves in California, favored for its proximity to the Philippines in distance and in climate.[13]

The City of Stockton in California has a sizable Filipino-American population. Its schools reflect this fact. In 1977, the Stockton Unified School District reported that Filipino Americans comprised 4.5% of its total school population.[14]

A search of the professional literature failed to locate any systematic inquiry into how well these Filipino-American children have adjusted to schooling in the United States and how they have progressed academically. Research studies have yet to be made to ascertain the problems that Filipino-American children may be encountering in American schools and to discover the critical factors that affect their success or failure.

One very recent study did examine the relationship between perceived locus of control and school achievement among Filipino-American elementary school children. The

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[13]H. Brett Melendy, "Filipinos in The United States," Counterpoint: Perspectives on Asian Americans, Emma Gee (ed.), (Los Angeles: University of California, 1975), 423-433.

[14]Research and Evaluation Office, Stockton Unified School District, Racial and Ethnic Report (October, 1977).

results stressed the relevancy of locus of control as a learning factor and disclosed significant correlations between high achievement and internal locus of control for middle-class children between the ages of nine and thirteen.[15]

Another study included Filipino-American children, among others, in the sample. This study, conducted by Chambers and Jennings of the University of the Pacific in 1975, sheds some light as to the effect of different linguistic environments on the ability to read and write in standard American English. Eight linguistic sets of children from the Stockton Unified School District were studied, two of which included a group with Tagalog (the Filipino national language) as first language and another group of Tagalog-English bilinguals. The results of the study indicate that both groups seemed unaffected by their linguistic background in their ability to understand and communicate in English.[16]

## Statement of the Problem

This study sought to determine whether a relationship existed between certain home factors (as measured by an

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[15]Estela Pinga, "Relationship between Perceived Locus of Control and Achievement among Filipino-American Students in the Elementary Grades" (unpublished Doctoral dissertation, University of the Pacific, 1979).

[16]Dewey Chambers and S. Jennings, "The Achievement Patterns of Eight Linguistic Sets of Children in a Pluralistic Community," (Monograph No. 1, Bureau of Research and Field Services, School of Education, University of the Pacific, Stockton, CA, 1975).

interview schedule) and the reading achievement of Filipino-American third-grade and fifth-grade pupils in the Stockton Unified School District (SUSD). Specifically, the study attempted to answer this major question: Are there significant relationships between reading achievement as determined by scores on the Metropolitan Achievement Tests (MAT) and one or more of the process variables that make up the Index of Educational Environment (IEE)? The study also had the following related objectives:

1. To ascertain whether a two-year difference in grade level produces any variation in the correlations obtained;

2. To determine whether the demographic variables of socio-economic status, parents' educational level, parents' generational status, and sex significantly relate to the reading achievement of Filipino-American children.

Data Gathering and Instrumentation

The instrument used for measuring the home educational environment was a measure developed by Dave. Its use required an approximately one-hour interview with one or both parents. Rating scales were used to produce a composite score known as the Index of Educational Environment (IEE). Measures of reading achievement were provided by scores obtained on the 1971 edition of the Metropolitan Achievement Tests (MAT) Primary II (for Grade 3) and Intermediate Level (for Grade 5), administered at the end of the 1977-78 school

year. The Index of Status Characteristics by Warner, Meeker and Eels was used to determine the socio-economic levels of the families involved in the study.

The sample population of this study included ninety-six Filipino-American third-grade and fifth-grade pupils enrolled in the Stockton Unified School District during the 1977-78 school year. The MAT reading scores were obtained from the District Office with the permission of the SUSD Research and Evaluation Office. Letters to parents were sent to secure permission for the researcher to obtain their children's MAT scores and to conduct a home interview.

## Limitations and Delimitations

The third grade was considered suitable for inclusion in this study because at this level practically all the basic decoding and comprehension skills will have been taught.[17] Thorndike also believes that this is the level in which the equivalence between oral language and the written symbolism is mastered by the learner.[18] The choice of a higher level, fifth grade, was motivated by the intent to determine which relationships are lasting and stable and are not eliminated by time and experience.

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[17] A brief perusal of the State Framework in Reading and two basal reading series (Open Court and Harper and Row) in use in most SUSD schools support this assertion.

[18] Thorndike, op. cit., p. 13.

To insure the validity of the reading scores, non-English and limited-English speaking students were deleted from the study. The names of these children are listed in the Basic Inventory of Natural Language (BINL) data sheets available at the Multilingual/Multicultural Center, SUSD.

Measures of reading achievement were limited to scores on the MAT. This is the standardized reading achievement test that SUSD administers to the children at the end of the school year.

A limitation inherent in a study of this type involves the reluctance on the part of the parents to participate in the interview. About 20% of the parents contacted expressed their unwillingness to be interviewed.

## Definition of Terms

### Educational Environment of the Home

Dave defines educational environment as "those conditions, processes, and socio-psychological stimuli of the total environment which affect the educational achievement of the child."[19] The educational environment in the home is regarded as a specific component of the total home environment--a subset of conditions and processes referred to as process variables, that are related to the educational achievement of the child. These process variables are

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[19]Dave, op. cit., p. 16.

further defined in terms of process characteristics that can be more easily identified from responses and reactions to the interview schedule. In this study, the process characteristics that are deemed contributive to the formation of the educational behavior of the child are grouped under six process variables. A list of these process variables and their respective process characteristics appear in the third chapter.

Index of Educational Environment (IEE)

The Index of Educational Environment is a single indicator of the educational environment in the home. It is a composite measure based on the six process variables used in this study. The process of arriving at the IEE will be more fully discussed in **Chapter Three.**

Reading Achievement

Reading achievement refers to the reading performance as indicated by standard scores obtained in a standardized reading test. In this study the standardized reading test used is the Metropolitan Achievement Tests.

Parents' Generational Status (PGS)

Generational status refers to the degree to which a person is removed from being native-born. In this study the parents' generational status (PGS) is either of two categories: 1) both parents born in the Philippines and referred to as native, and 2) one or both parents not born in the

Philippines and given the category non-native. PGS serves as a measure of acculturation. Parents born in the Philippines are generally expected to transmit their native values, beliefs and aspirations to their children. Likewise, there is the great likelihood that parents born and who have lived in the United States for some length of time will rear their children within the bounds of the American culture and mores.

Socio-economic Status (SES)

The socio-economic status of an individual describes his standing in the socio-economic class system in the community where he lives. For purposes of this study, the SES was established by using the Index of Status Characteristics by Warner, Meeker and Eels.[20] Three basic criteria were used in this scale: occupation, type of dwelling and type of dwelling area. The classifications used were those suggested by the authors and will be discussed in more detail in Chapter III.

## Significance of the Study

This study is one of the earliest attempts to use Filipino-American children exclusively as subjects of contemporary research projects in education.[21] It underscores

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[20] Lloyd Warner, et al., Social Class in America (New York: Harper and Row Publishers, 1960), p. 127.

[21] A recent doctoral dissertation by Pinga (see Bibliography) utilized a sample solely composed of Filipino-American elementary grade pupils.

the importance of utilizing all culture groups comprising the school population as sources of empirical data for studies that affect the education of all children. In a school district such as Stockton, where more than half of the student population consists of ethnic minorities (55%),[22] it behooves educators and administrators to direct efforts toward uncovering and understanding factors that may be helpful in instructional planning and in maximizing learning opportunities for these groups of children. If, as many studies have purported to show, reading achievement significantly relates to home environment, this study offers additional empirical evidence and expands the generalizability of such a correlation to Filipino-American school children.

The present study seeks to provide a better understanding of the educational environment in the home in terms of process variables. Some insight into the dynamics of the educational environment of the home can aid the educator in formulating realistic programs of instruction and guidance. An awareness on the part of both the educators and the parents that many forces in the home serve as powerful antecedents of the child's academic achievement can help strengthen the educational partnership bond between the home and the school.

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[22]Research and Evaluation Office, SUSD, op. cit.

## Organization of the Study

This initial chapter provided an overview of the study and the specific problem investigated. Four chapters comprise the remainder of the study. Chapter II reviews the relevant literature. Chapter III includes the procedures used in gathering data, the assessment instruments, and the manner in which the data were treated. Chapter IV presents an analysis of the data and interpretation of the findings. The final chapter contains the conclusions, implications from the findings, and recommendations for further research.

## Chapter II

## REVIEW OF THE LITERATURE

Studies associating home environment with academic achievement abound in the literature. However, similar studies using Filipino-Americans in the sample population are virtually non-existent. This chapter reviews the related research on home environment as it relates to academic performance and reading achievement. Discussions will be under the following general headings:

1. Assessment of Home Environment
2. Study of Home Environment: Static Variables
3. Study of Home Environment: Process Variables

### Assessment of Home Environment

As early as the first quarter of the century, attempts were made to evolve some quantitative measures of the home environment of the child. They were largely concerned with easily observable and measurable aspects of the socio-economic status of the home. The investigations were usually content with utilizing single indicators of environmental differences. Status variables such as socio-economic class, father's

occupation, and parents' education were often used. Most studies regarded the occupation of the father as a fair measure of the socio-economic status of the home and the best single index to differences between homes. The Taussig Scale and the Barr Scale were based solely on occupational classifications where values were assigned according to estimates on the relative demands made on intelligence by each occupation.[1]

Studies by Sydenstricker and others attempted to measure family life from the standpoint of income.[2] Devising a unit for interpreting income, the family monthly income was used with age and sex of each member of the family for comparative purposes.

It was not difficult to recognize the limitations of these single-criterion scales. Almost at the same time other scales utilizing more than one factor in the classification of homes came into existence. Leahy makes reference to the early 1900 studies of Commons, Perry, and Holley, which included multiple-factor classifications on home environment.[3] Home features that were considered were location of the house, number of occupants, lighting, preparation of

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[1]Elizabeth Fraser, Home Environment and the School (London: University of London Press, 1959), p. 8, citing F. Taussig, Principles of Economics (New York: The McMillan Company, 3rd ed., 1924).

[2]Leahy, op. cit., p. 3.

[3]Ibid., p. 4.

food, number of books, education of parents and monthly rental.

Two of the earlier, more carefully standardized measures of home background are the Sims Score Card and the Minnesota Home Status Index. The Sims Score Card includes items on occupation of the father, parents' education, number of reading materials found in the home; items on material possessions such as car, piano, telephone are also included.[4] The various items on the scale were found to give reasonably consistent assessment of the home environment. The Minnesota Home Status Index provides a "home status profile" with standard scores on six measures of home background: occupational status, education of parents, economic status, cultural status, sociality, and children's facilities.[5] While it is interesting to note that the method used for collecting information for the Minnesota Index was the interview, a scrutiny of the questions revealed that they yielded only numerical and yes-no responses.

Most of the early studies correlated the home background measures with intelligence. In a summary of the more important studies on home background-intelligence correlations Fraser reports that the correlations were highest when

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[4]J. C. Chapman and V. M. Sims, "The Quantitative Measurement of Certain Aspects of Socio-Economic Status," Journal of Educational Psychology, Vol. XVI (1925), pp. 380-90.

[5]Leahy, op. cit., pp. 39-49.

a culturally loaded measure of environment was used.[6] Of the eighteen studies she listed, the study by Van Alstyne has the highest correlation, $r = 0.61$. Using a sample of seventy-five three-year-old children, Van Alstyne used a scale that places considerable stress on the early verbal development of the child and on the amount of verbal stimulation provided by his parents.

Later studies correlated home environment factors with behavior and personality characteristics such as achievement motivation and self-esteem.[7] Most of the more recent studies on home environment were in connection with educational performance, particularly reading achievement. These studies will be discussed later in this chapter.

We glean from the literature that later measures of home environment not only included more aspects of the home but also attempted to get at qualitative differences among them. Home visitations have become a major means of securing data. In 1959 Fraser[8] studied 427 secondary students, visited their homes, and examined four main aspects of the home environment: cultural, material, motivational and emotional.

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[6]Fraser, op. cit., p. 10.

[7]Joel Weiss, "The Identification and Measurement of Home Environmental Factors Related to Achievement Motivation and Self-Esteem (unpublished Doctoral dissertation, University of Chicago, 1969).

[8]Fraser, op. cit., p. 40.

Items that reflect the socio-economic level of the home comprised only one of Fraser's four categories (material). She found a multiple correlation coefficient of $\underline{r}$ = .69 between these home environment measures and IQ and $\underline{r}$ = .75 with the criterion measure of total grade point average of three years.

Two approaches to the study of environment seem to emerge from the readings. They differ in the nature of the variables studied and in the means of collecting pertinent data. One approach which received more emphasis in past research investigates variables that are demographic and "static" in nature. It is done largely through the use of questionnaires completed by parents or students. The other approach relies on home interview techniques for gathering data. Instead of simply looking at the characteristics of family structure and social status, this approach emphasizes a measure of environment based on "process" variables, those dynamic interactions between child and parent that are conceived to significantly influence the child's behavior.

A number of studies establishing relationships between school performance and home factors have utilized measures of home environment that have been arrived at through either of these approaches. The next two sections will discuss these studies in more detail.

## Study of Home Environment: Static Variables

Static variables are those demographic factors that describe some aspect of the family or home. The more common static variables used in studies related to learning and academic performance are father's occupation, income, parents' education, dwelling area, and the composite of some or all of these--socio-economic status. Birth order, number of siblings, age, and sex are family structure variables that are also static in nature and have been used with frequency.

The major demographic variable in terms of the copious quantity of research is socio-economic status (SES). SES is measured by objective ratings. The objective technique involves the combining or weighting of scores on variables such as occupation, education, income, area of residence and the like so as to produce an index of the position of the child's family in the social class hierarchy.

Two of the more frequently used indices of SES are Hollingshead's Two-Factor Index of Social Position[9] and the Index of Status Characteristic (ISC) by Warner, Meekers and Eels.[10] Hollingshead used occupation and education to determine social position. The two factors are combined by weighting individual scores obtained from the scale positions.

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[9]August Hollingshead, Two Factor Index of Social Position (New Haven, Connecticut: August B. Hollingshead, 1957).

[10]Warner et al., op. cit., pp. 121-130.

Warner's ISC is based on ratings on four characteristics: occupation, source of income, house type and dwelling area. Three out of these four criteria can still be used to ascertain the ISC. The present study used three of the four characteristics; source of income was not included.

The literature is preponderant with studies related to socio-economic status, sex differences, and family structure. The discussions that follow will concentrate on these variables.

SES and Reading Achievement

The relationship between SES and school achievement, particularly reading achievement, has been the focal point of repeated research. Most research studies that were reviewed showed positive correlations between SES and school achievement. Some studies focused attention on the differences between poor and good readers, while others studied only underprivileged children.

In 1940, Coleman investigated the relationship between SES and reading performance of junior high school students. He identified three SES groups and found that the poor readers in both grades 7 and 8 were children of low SES.[11]

Drawing his sample from Denver schools in Colorado,

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[11]H. S. Coleman, "The Relationship of Socio-Economic Status to the Performance of Junior High School Students," Journal of Experimental Education (September, 1940), 61-63.

Granzow confirmed Coleman's findings.[12] Grade 6 and 7 underachievers in reading tended to come from lower SES homes. The parents of these underachieving readers also had less educational advantages.

Sheldon and Carillo[13] also used a sample of good and poor readers. They were selected on the basis of achievement test scores and teacher ratings. In terms of the educational level of the parents, 35% of the good readers' parents completed college whereas only 7% of the poor readers' parents did. The authors also found that 55% of the children who were good readers had fathers in professional and managerial occupations; only 25% of the poor readers had fathers in this classification.

School achievement as the dependent variable of most SES-related studies has been based on pupil performance on some standardized achievement test. Using the California Reading Achievement Test, Wilson studied the reading achievement of sixth-grade pupils. He found that over 90% of the students from the upper economic strata were reading at their appropriate age-grade levels. Only one-third of those from families of unskilled or semi-skilled workers were

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[12]K. R. Granzow, "A Comparative Study of Underachievers, Normal Achievers, and Overachievers in Reading," Dissertation Abstracts (1954), 14, 631-632.

[13]W. D. Sheldon and L. Carillo, "Relation of Parents, Home, and Certain Developmental Characteristics to Children's Reading Ability," Elementary School Journal, 52 (January, 1952), 266-270.

reading at grade level.[14]

Using the Metropolitan Achievement Tests reading battery, Gredler analyzed the performance of students coming from disadvantaged environments.[15] His subjects were Blacks and Whites in the third and fourth grades. Both groups scored below the normative groups, but no significant difference was discovered between the Black and the White groups, indicating the influence of their particular environment on their achievement.

Several achievement areas including reading comprehension and vocabulary as these relate to SES were studied by Hill and Giammatteo. The correlations they found "suggest to a great extent that socio-economic status was a factor in school achievement."[16]

Income was used as an SES variable in a study by Callaway, Jerrolds and Gwaltney.[17] They correlated income and other demographic data with reading and language achievement. Their findings revealed that the groups with "more

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[14]Alan Wilson, "Social Stratification and Academic Achievement," in Education in Depressed Areas, (ed.) Harry Passow, (New York: Teachers College Press, 1963), 217-35.

[15]Gilbert Gredler, "Performance on a Perceptual Test with Children from a Culturally Disadvantaged Background," Perception and Reading, (ed.) Helen K. Smith (New York: International Reading Association, 1968), pp. 86-91.

[16]Edwin Hill and Michael Giammatteo, "Socio-Economic Status and Its Relationship to School Achievement in the Elementary School," Elementary English (March, 1963), 265-70.

[17]Callaway, Jerrolds and Gwaltney, op. cit.

than average" and "average" family income read better than those with "less than average" and "very low" family income.

Father's occupation as another SES variable was found to relate to school achievement by Miner[18] and to reading achievement by Goldstein.[19] Similar results were had in studies conducted many years ago by Long,[20] and Smith and Penny[21] and the more recent studies of Caccamo[22] and Perrin.[23]

Studies have been found to negate the findings of the above-mentioned investigations. Hall sought to compare the reading achievement and listening comprehension of poverty-level students with that of non-poverty children.[24]

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[18]Betty Miner, "Sociological Background Variables Affecting School Achievement," Journal of Educational Research, 61 (April, 1968), 373-81.

[19]K. M. Goldstein, et al., "Family Patterns and the School Performance of Emotionally Disturbed Boys," Journal of Learning Disabilities, Vol. 3, No. 1 (January, 1970), 10-15.

[20]H. H. Long, "Test Results of Third Grade Children Selected on the Basis of Socio-Economic Status," Journal of Negro Education, 4 (April, 1935), 192-222.

[21]H. A. Smith and L. L. Penny, "Educational Opportunity as a Function of Socio-Economic Status," School and Society, 84 (September, 1959), 342-44.

[22]Vincent D. Caccamo, "SES, Environmental Process Variables and Elemental Reading Skills" (unpublished Doctoral Dissertation, University of California at Berkeley, 1973).

[23]Janis Ann Perrin, "The Relationship of Ethnicity and Socio-Economic Status to Reading Achievement," (unpublished Doctoral dissertation, Texas Tech University, 1976).

[24]H. M. Hall, "Listening Comprehension and Reading Achievement in First and Second Grade Children of Selected Social Class and Intellectual Levels," (unpublished Doctoral dissertation, University of Alabama, 1969).

His subjects were first and second graders in nine Louisiana parish schools. Hall's analysis of the data did not reveal any significant difference in reading achievement or listening comprehension between the first grade and second grade culturally deprived and non-culturally deprived groups.

Callaway, Jerrolds and Gwaltney found "there were no significant differences in reading between groups based on the social position of the family's principal wage earner, as determined by the Hollingshead's scale."[25] And Callaway of this same team of researchers conducted a similar study but used a different group of sample.[26] Family income, found to be significant for the sample in the other study, was found to have little relationship with reading achievement.

In a longitudinal study conducted with Anglo and Black students, Osborne[27] showed that SES did not have an effect on reading achievement. His subjects were sixth, eighth, and tenth graders who were administered the California Achievement and Mental Maturity tests. Osborne did not believe that the students' differential performance on the test can be attributed to poor environment and limited educational opportunities.

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[25]Callaway, Jerrolds and Gwaltney, op. cit., p. 26.

[26]B. Callaway, "Relationship of Specific Factors to Reading," Reading and Realism, Proceedings of the International Reading Association (1969), 688-92.

[27]R. T. Osborne, "Racial Differences in Mental Growth and School Achievement: A Longitudinal Study," Psychological Reports, 7 (October, 1960), 233-39.

Although the results of research into the relationship between school achievement and SES are not consonant, one cannot totally discount the discernible implications of SES on academic performance, particularly on reading achievement. As Lavin explains:

> The central significance of socio-economic status lies in the fact that it summarizes a variety of other facotrs that are related to school performance....SES is a derivative or summarizing variable. Persons of different socioeconomic status face different kinds of life situations, and in adapting to them, they may develop different sets of values, attitudes, and motivations related to academic performance.[28]

In the sense that SES summarizes other variables such as intelligence and the "achievement syndrome,"[29] it becomes a significant variable in the study of academic achievement. For this reason, SES has been included as an independent variable in the present study.

## Sex Differences and Reading Achievement

Sex has been a variable in much research on reading achievement. In many studies it is the major variable. This study treats sex as a peripheral correlate of reading achievement.

Most of the studies that basically assess the relation between sex and academic performance show that females

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[28]David E. Lavin, The Prediction of Academic Performance (New York: Russell Sage Foundation, 1965), p. 123.

[29]Ibid., p. 124.

have higher academic performance than males.[30] The superior performance of girls over boys also holds true in relation to reading achievement. Research has shown that girls not only learn to read earlier[31] but they also do better in tests of reading comprehension and word discrimination skills.[32]

Boys outnumber girls in classes for remedial reading and learning disability. Naiden reports that "the ratio of boys to girls with significant deficit in reading in the entire school population in Seattle is 3 to 2."[33]

Research findings indicating that the level of reading achievement of females is higher than that of males seem to suggest that the development of underachievement may follow a different pattern for boys than for girls. According to Lavin

> In all likelihood the significance of these findings can be understood in terms of a variety of differences in attitudes and behavior which

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[30] Ibid., pp. 152-153.

[31] I. H. Anderson, et al., "Age of Learning to Read and Its Relation to Sex, Intelligence and Reading Achievement in the Sixth Grade," Journal of Educational Research, XLIX (February, 1956), 447-453. Also, George Spache, et al., "A Longitudinal First Grade Reading Readiness Program," Reading Teacher, XIX (May, 1966), 580-584.

[32] Mildred Hughes, "Sex Differences in Reading Achievement in the Elementary Grades," Supplementary Educational Monographs LXXVII (1953), 102-106; see also, Jo Stanchfield, "Development of Prereading Skills in an Experimental Kindergarten Program," Reading Teacher, XXIV (May, 1971), 699-707; Arthur Rosequist, "School and Home Cooperation and the Reading Achievement of First Grade Pupils," (unpublished Doctoral dissertation, University of California at Berkeley, 1972).

[33] Norma Naiden, "Ratio of Boys to Girls Among Disabled Readers, Reading Teacher, XXIX (February, 1976), 439-442.

> result from the fact that males and females are socialized differently. Each sex must learn to play a different role, and the attitudes and values associated with sex-role learning may help to explain sex differences in academic performance.[34]

Other studies attest to the absence of significant differences in reading achievement between boys and girls.[35] More research is needed to further document the evidence already available and to specify the sources of the differences.

## Family Structure Variables

Two family structure variables that are classificatory in nature will be discussed in this section. They are not included in the present study but their importance may be indirectly felt as they impinge on parent-child interactions such as those to be discussed in the next section.

Previous research relating sibling position to achievement presents conflicting findings. The first born child had been demonstrated to be brighter and to achieve all around on a higher level. Bradley and Sanborn studied the ordinal position of high school students identified by

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[34] Lavin, op. cit., p. 130.

[35] C. V. Millard, "Nature and Character of Pre-Adolescent Growth in Reading Achievement," Child Development, XI (1940), 71-114; N. B. Sinks and M. Powell, "Sex and Intelligence as Factors in Achievement in Reading in Grades Four through Eight," Journal of Genetic Psychology, CVI (1965), 67-69; K. E. Dakin, "A Longitudinal Study of Sex Differences in Reading Achievement in Grades Four through Eight," (unpublished Master's Thesis, Rutgers, The State University, 1970).

their teachers as superior.[36] The teachers tended to select first borns as those with the greatest scholastic promise quite consistently. McClure[37] and Bradley[38] showed that first borns had higher grade point averages, and when contrasted with later borns, chose reading a book to talking to, or watching television with, a friend.

The superiority of the first born child has been refuted by the results of other studies. Schoonover found no significant differences between older and younger siblings in intelligence or achievement.[39] Polirstok's investigation[40] and that by Cicirelli,[41] did not yield conclusive results to support the hypothesis that first born children would significantly demonstrate higher academic achievement.

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[36]R. Bradley and M. Sanborn, "Ordinal Positions of High School Students Identified by their Teachers as Superior," Journal of Educational Psychology, LX (February, 1969), 41-45.

[37]R. McClure, "Birth Order, Sex, Income and School Attitudes," Journal of Experimental Education, XXXIX (Summer, 1971), 73-74.

[38]R. Bradley, "Birth Order and School Related Behavior: A Heuristic Review," Psychological Bulletin, LXXX (1968), 45-51.

[39]S. Schoonover, "The Relationship of Intelligence and Achievement to Birth Order, Sex of Sibling and Age Interval," Journal of Educational Psychology, L (1959), 143-146.

[40]S. Polirstok, "The Relationship Between Birth Order and Reading Ability in Urban Ninth Grade Junior High School Students," Graduate Research in Education and Related Disciplines (School of Education, The City College of New York, Spring, 1975), 68-97.

[41]V. Cicirelli, "Sibling Constellation, Creativity, IQ, and Academic Achievement," Child Development, XXXVII (June, 1967), 481-490.

The empirical evidence regarding the number of siblings and achievement appears relatively more congruous. A number of investigations have found family size negatively related to intelligence.[42] A negative correlation was also found with reading achievement in most countries in the IEA study.[43]

Miner studied several family characteristics that included family size. Of the results she states:

> The correlations between family size and objective achievement are all significant at the .05 level. Thus, it would appear that the larger the size of the family the poorer the performance of the child in school. Contrary to expectations, this finding was not influenced by partialling out socioeconomic status, suggesting that there is a deleterious effect of a large family size regardless of the material advantages available in the home.
>
> In summary, birth order and family size appear to be related to achievement. First-born children and children in small families tend to achieve at a higher level than later-born children and children in large families.[44]

A well-quoted study was conducted in Averdeen by Nisbet who hypothesized that "the environment of the large family--the limited amount of contact between parent and child, and consequent retardation of the child's verbal development--tended to depress the environmental component of

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[42] W. N. Dessenberger, "A Comparative Study of Bright, Average, and Dull Pupils and their Unselected Siblings," (unpublished Doctoral dissertation, Teachers College, Temple University, 1951); see also Betty Miner, "Three Factors of School Achievement," Journal of Educational Research, LX (1967), 370-376.

[43] Thorndike, op. cit., p. 376.

[44] Miner, op. cit., p. 377.

a child's test score."[45] His study has pointed out that family size is inversely related to intelligence.

Family size, like SES and the other static variables, assumes significance for educational performance when it acts as a mediator in parent-child relationships. The association between family size and intelligence is explained by Nisbet as due to the negative effects of large families, especially of low SES, on verbal development.[46] Belonging to a big family implies restricted contact with adults and fewer opportunities of acquiring adult habits of speech and thought, a disadvantage which enters into the test performance of children from large families.

## Study of Home Environment: Process Variables

The need for more precise and specific environmental measures which relate to the rate and level of development of specific characteristics and behavior has been felt by educational researchers. They consider the available environmental measures consisting largely of static variables so general that they do not reflect the features of specific environments that greatly influence the individual's educational behavior. In explaining the kind of environmental

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[45]John Nisbet, "Home Environment and Intelligence," Education, Economy and Society, A. H. Halsey, J. Floud and C. A. Anderson, eds. (New York: The Free Press, 1961), 273-287.

[46]Ibid., p. 274.

measures needed, Bloom states that "these features are likely to include the behavior of the significant individuals in the environment, the presence and use of specific rewards and punishments, the presence and clarity of models of behavior, and the availability and use of particular facilities and materials."[47]

Attempts have been made to develop a set of measurement procedures that more searchingly summarize the interactional processes between the individual and the various features of his environment. In 1959, Fraser made some headway in this direction when she included motivational and emotional aspects of the home in her study.[48] Utilizing a home interview schedule she noted how parents encouraged their child toward academic pursuits, and their attitudes toward his education and future occupation. She found a correlation of $\underline{r}$ = .66 between parental encouragement and grades.

Even the early study of Van Alstyne included many variables that approach the definition of environmental process variables. Her list included such variables as (1) number of hours child is read to and told stories to, (2) opportunity for use of constructive play materials, and (3)

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[47]Bloom, op. cit., p. 221.

[48]Fraser, op. cit.

number of hours adults are with child daily.[49] Correlations between these variables and the intelligence of three-year-olds as measured by the Kuhlmann-Binet were $r$ = .43, $r$ = .50, and $r$ = .30, respectively.

Dave[50] and Wolf[51] undertook to develop a model for systematically specifying some of the essential characteristics of an environment which can positively or negatively affect the development of general intelligence and school achievement. Their works exemplify a departure from the traditional measures of the environment. These researchers sought to identify and measure "environmental process variables" hypothesized to relate directly to general intelligence (Wolf) and to school achievement (Dave). These process variables depict ongoing processes as the individual interacts with and makes use of the learning-related elements of his environment.

Wolf has identified three environmental process variables based on relevant theoretical and empirical literature in the areas of motivation, learning, child development, and psychometry.[52] He isolated a network of thirteen environmental characteristics grouped into these three general

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[49]D. Van Alstyne, The Environment of Three-Year Old Children (New York: Teachers College, Columbia University, 1929), pp. 17-29.

[50]Wolf, op. cit.

[51]Dave, op. cit.

[52]Wolf, op. cit., pp. 29-48.

dimensions. The measures of the process variables were derived from ratings on each of the characteristics based on the answers to questions asked of the mothers. Wolf obtained a correlation $r$ = .69 between his total measure of process variables and the Henmon-Nelson Test of Mental Maturity. Wolf's process variables and their corresponding process characteristics are listed below:

1. Press for Achievement Motivation
    a. Nature of intellectual expectations of the child
    b. Nature of intellectual aspirations for the child
    c. Amount of information about child's intellectual development
    d. Nature of rewards for intellectual development
2. Press for Language Development
    a. Emphasis on use of language in a variety of situations
    b. Opportunities provided for enlarging vocabulary
    c. Emphasis on correctness of usage
    d. Quality of language models available.
3. Provisions of General Learning
    a. Opportunities provided for learning in the home
    b. Opportunities provided for learning outside the home (excluding school)
    c. Availability and encouragement of use of learning supplies
    d. Availability and encouragement of use of books, periodicals and library facilities

e. Nature and amount of assistance provided to facilitate learning in a variety of situations.[53]

Dave, working with the same sample and using the same interview schedule, listed twenty-one environmental characteristics clustered into six categories. The correlation between Dave's measure of educational environment and the total achievement score on the Metropolitan Achievement Tests is $\underline{r} = .799$.[54]

Dave's model has been chosen for use in the present study for two reasons. First, a quick perusal of the model given in Table 4 brings to the fore the great similarities between Wolf's process variables and the first three in Dave's list. The inclusion of the three other variables in Dave's model presumably would allow for a better description of the underlying dynamic processes in the home which act upon the individual. Because of the more specific delineations of the home environment contained in the model, measurement should potentially be more meaningful. Secondly, Dave used his model to measure the educational environment in the home and then to correlate it with school achievement. The present study has essentially the same objective.

The interview schedule used by Wolf and Dave has been slightly revised (the number of interview questions was increased by one) and adopted by the Southwestern Cooperative

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[53]Wolf, op. cit., pp. 36-48.

[54]Dave, op. cit., pp. 38-39, 100.

Educational Laboratory, Inc. The SWCEL revision under the authorship of Wolf incorporates both Wolf's scale for measuring the intellectual environment in the home and Dave's for measuring the academic environment.

Many studies replicated Wolf's and Dave's investigations of the home environment in terms of process variables. Using the SWCEL parent interview schedule Koppenhaver investigated the relationship between home environment and the reading achievement of high-achievers and low-achievers at the fifth grade level. He concludes that there is "a qualitative difference in the academic environment in the homes of the two groups in favor of the high achieving pupils."[55] A significant difference was also found between the mean scores of the two groups in relation to the intellectual environment in the home. High achievers in reading were found to come from homes with better intellectual environments.

Segesta replicated Koppenhaver's study but used Mexican-American fifth graders for her sample.[56] Koppenhaver's conclusions found partial support in Segesta's data. The academic environment correlated significantly with high achievement scores but the intellectual environment did not.

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[55]A. Koppenhaver, "Reading Achievement as Influenced by Certain Home Factors" (unpublished Doctoral dissertation, University of Southern California, 1971), p. 72.

[56]E. Segesta, "Reading Achievement as Influenced by Certain Home Factors in Mexican-American Homes" (unpublished Doctoral dissertation, University of Southern California, 1976).

There was, however, a significant difference at the .03 level on one variable--Provision for General Learning--in favor of high-achieving readers.

Also working with Mexican-American subjects, Henderson found significant relationships between a modified version of Wolf's interview schedule and two measures of intelligence, the Van Alstyne Picture Vocabulary Test and the Goodenough-Harris Drawing Test.[57] Garber likewise modified Wolf's questionnaire and found clear differences among the home environments of Spanish-American, Navajo, and Pueblo first graders.[58]

The Home Environment Review (HER), developed by Garber, is a shortened version of Wolf's questionnaire (administration time set at fifteen minutes). The instrument is composed of nine variables and nine rating scales. Garber and Ware employed the HER to examine relationships between home environment and intelligence. Their sample consisted of Caucasian poverty level first-graders enrolled in the Follow-Through Program. A stepwise multiple regression analysis produced a multiple correlation coefficient of

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[57]R. Henderson, "Environmental Stimulation and Intellectual Development of Mexican-American Children: An Exploratory Study" (unpublished Doctoral dissertation, University of Arizona, 1966).

[58]M. Garber, "Ethnicity and Measure of Educability" (unpublished Doctoral dissertation, University of Southern California, 1968).

$\underline{r}$ = .49 when all nine variables were included in the prediction equation.[59]

Another study using the SWCEL parent interview and rating scales was conducted by Day. Her study focused on the relationship of the home environment to the achievement of disadvantaged Mexican American and Caucasian fourth grade pupils.[60] Using the Comprehensive Test of Basic Skills, she grouped her sample into high and low achievers. The findings of a two-by-two chi-square test of significance netted results that were statistically significant beyond the .001 level.

Two other studies that delved into the influence of home factors on reading achievement were carried out by Yokley[61] and Alvira-Benitez.[62] Yokley interviewed both parents and children to gather information regarding these environmental variables:

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[59]W. B. Ware and M. Garber, "The Home Environment as a Predictor of School Achievement," Theory into Practice, XI (June, 1972), 191-195.

[60]S. Day, "Home Factors Influencing Achievement of Disadvantaged Students" (unpublished Doctoral dissertation, University of Southern California, 1973).

[61]A. M. Yokley, "A Study of the Relationship Between Parent-Child Interaction and the Reading Achievement of Elementary School Children" (unpublished Doctoral dissertation, Indiana University, 1958).

[62]S. Alvira-Benitez, "Selected Factors in Home Environment and Puerto Rican Fourth Grade Pupils' Reading Achievement" (unpublished Doctoral dissertation, Temple University, 1976).

1. language experiences in the home
2. home-school relationships
3. level of aspirations for the child
4. daily routine duties in the home
5. parental methods of discipline and control
6. recreational activities in the home

Alvira-Benitez had subjects who were Puerto Rican fourth graders in a low socio-economic district. His list of general home environment variables included:

1. home living environment
2. economic status
3. educational background of parents
4. language used at home
5. reading activities
6. parent-child reading interaction

Both researchers conducted personal interviews with parents in the home with interview questions they themselves developed and pilot tested. Yokley's major hypothesis was supported by her findings which showed that the interaction between parents and their children was significantly related to the reading achievement of the children. Her results disclosed a difference between family living in the homes of the good readers and that found in the homes of most of the poor readers.

Out of the twenty-one specific home variables listed on Alvira-Benitez's questionnaire, twelve emerged as predictable factors for the Iowa Test of Basic Skills and fourteen

for the Lippincott Series Test. Six were commonly shared. Aspects of the home environment such as reading activities of parents and children, viewing of educational TV programs, use of house space, and number of family members living in the house were found to have a strong influence on the children's reading achievement.

Environmental process variables were used in two cross-cultural studies. In a study of Trinidad natives in the West Indies, Dyer investigated the relationships between home environment and both intelligence and school achievement.[63] Using a sample of fifth graders and Wolf's and Dave's environmental scales, Dyer obtained correlations of $\underline{r}$ = .86 between environment and achievement and $\underline{r}$ = .68 between environment and intelligence. In England, Marjoribanks developed a new measure of the home learning environment that parallels Wolf's and Dave's instruments. The home learning environment is defined as the union of four subenvironments postulated to be related to these four mental abilities: verbal, number, spatial, and reasoning. A set of eight environmental forces and their related environmental characteristics were then identified and postulated to be related to the mental abilities. The forces were labeled:

1. press for achievement
2. press for activeness

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[63] P. B. Dyer, "The Effects of Environmental Process Variables on the School Achievement of Elementary School Children in Trinidad, West Indies" (unpublished Doctoral dissertation, University of Alberta, 1966).

3. press for intellectuality
4. press for independence
5. press for English
6. press for ethlanguage (language spoken in the home other than English)
7. mother dominance
8. father dominance

Summarizing his findings, Marjoribanks states:

> The environment measure accounted for a large percentage of the variance in verbal, number and total ability scores and a moderate percentage of the variance in reasoning ability scores. For spatial ability the relationship with the environment was less definite. The environment measure accounted for more of the variance in the ability scores than did a set of social status indicators and family structure variables.[64]

The foregoing studies illustrate the usefulness of a conceptually separate sub-environment as being important in studying individual cognitive characteristics. One can conceive, then, of as many sub-environments, or constructs, as there are individual characteristics. It appears that these sub-environments can be measured with efficacy through the identification of process variables that best describe as exhaustively as possible all the complex forces and factors which surround, engulf and play on the individual. The wide range of process variables that research has so

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[64]K. Marjoribanks, "Environment, Social Class, and Mental Abilities," Journal of Educational Psychology, LXIII (1972), 103-109.

far evinced and the close semblance of many of them point to the possibility that ways of describing and measuring environments with more precision and refinement may be empirically established.

## Summary

The preceding discussions give evidence of the direction that the study of home environment has taken in the last two decades. A more discerning concept of environment such as that advanced by Bloom paved the way for the evolvement of environmental measures that more truly demonstrate the potent interrelationships between sub-environments of the total environment that surround the individual and the development of selected behavioral characteristics such as intelligence, academic achievement and personality traits.

The trend has shifted from the use of socio-economic measures, or what has been termed "static variables," to the utilization of more subtle intrafamily and interpersonal measures. New instruments such as those devised by Wolf and Dave have been used to increase our existing knowledge of the interactive process between a student and his environment. But much still remains to be uncovered relative to environment-individual interaction processes which are educationally significant. We are aware that some environments clearly discourage school learning while other encourage and reinforce it. To a great extent, the nature and quality of

educational experiences are determined by the characteristics of the learner's environment. Research efforts are presently directed toward studying and measuring environmental features that tend to mold the educational behavior of the child. The quest continues for

> ...ways in which different parts of an individual's environment may be used to effect desirable changes in the individual as well as ways in which environments may be created which will bring about desired developments.[65]

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[65]Bloom, op. cit., p. 222.

# Chapter III

## METHODS AND PROCEDURES

This chapter is divided into four major sections. Preceded by a restatement of the problem, discussions will center on these main topics: (1) the hypotheses, (2) the nature and selection of the sample, (3) the instruments and procedures used for collecting the data, and (4) the statistical techniques utilized in the analysis of the data.

### Restatement of the Problem

This study investigated the relationship between the educational environment in the home and the reading achievement of Filipino-American third-grade and fifth-grade children in the Stockton Unified School District. It also looked into the social correlates of reading achievement such as socio-economic status, parents' educational level, parents' generational status, and sex of the children in the sample.

### The Hypotheses

The fundamental question to be considered is the relationship between the total rating on the Index of Educational Environment and reading achievement. It is anticipated that the data obtained from the interview schedule will reveal

a relationship between the educational environment in the home and reading achievement in Grades Three and Five. The first and second hypotheses are concerned with this relationship.

Hypotheses Three and Four are comparative in nature. The third hypothesis compares the IEE ratings for Grades Three and Five. It is hypothesized that the educational environment in the home changes in relation to age and grade level. The fourth hypothesis tests for significant differences between the two grade levels on the relationship of home educational environment to reading achievement. It is hypothesized that the correlation between the home educational environment and reading achievement diminishes as the child progresses in age and grade level.

In addition to the major hypotheses just described, four other minor hypotheses pertaining to the sociological variables of socio-economic status, parents' educational level, parents' generational status, and sex as they relate to reading achievement were developed. Expressed in null form, the eight hypotheses advanced relevant to this study are

Hypothesis One: There is no relationship between the measure of educational environment in the home and reading achievement of Filipino-American pupils in Grade Three.

Hypothesis Two: There is no relationship between the measure of educational environment in the home and reading

achievement of Filipino-American pupils in Grade Five.

Hypothesis Three: There is no mean difference between Grade Three and Grade Five in relation to the following environmental process variables:

1. Educational environment in the home (IEE)
2. Achievement press
3. Language models
4. Academic guidance
5. Activeness of the family
6. Intellectuality in the home
7. Work habits in the family

Hypothesis Four: The correlation between educational environment in the home and reading achievement in Grade Three is equal to the correlation between educational environment in the home and reading achievement in Grade Five.

Hypothesis Five: There is no relationship between socio-economic status and reading achievement.

Hypothesis Six: There is no relationship between parents' educational level and reading achievement.

Hypothesis Seven: There is no relationship between parents' generational status and reading achievement.

Hypothesis Eight: There is no relationship between sex and reading achievement.

## Nature and Selection of the Sample

Ninety-six Filipino-American children in the third and fifth grades who attended the Stockton Unified School

District during the 1977-78 school year comprised the sample of the study. The original list of potential subjects came from twelve schools in SUSD that had the greatest number of Filipino-American children as reported in the 1977 SUSD Racial and Ethnic Report. However, due to the limited number of third- and fifth-graders and the high percentage of non-response and reluctance on the part of the parents to participate adequately in the study, students from seven other schools were included and all those who responded were included in the sample. Six families were discovered to have children in both third and fifth grades. Each family was assigned to only one grade.

Eliminated from the study were those children identified as mentally retarded and those categorized as limited English speakers. The latter classification was on the basis of their performance on the test for language dominance administered yearly by SUSD in compliance with guidelines set for programs receiving Federal monies.

From the figures shown in Table 1, it is readily discernible that the sample is all but equally distributed between grades and between sexes. The difference between the number of native parents and that of the non-natives is obviously negligible. SES, however, presents a dissimilar pattern. Not only are there no families representative of the upper socio-economic level, but the number of low SES families far exceeds that from the middle level, up to three

Table 1

Description of Sample According to Socio-Economic Status, Parents' Generational Status, and Sex

| Demographic Characteristic | Grade 3* | Grade 5* | N |
|---|---|---|---|
| 1. SES | | | |
| Middle | 12 | 15 | 27 |
| Lower | 36 | 33 | 69 |
| 2. PGS | | | |
| Native | 25 | 27 | 52 |
| Non-Native | 23 | 21 | 44 |
| 3. Sex | | | |
| Male | 25 | 23 | 48 |
| Female | 23 | 25 | 48 |

*N for each grade is 48.

times as many in the third grade. This imbalance can partly be attributed to the fact that a number of the more affluent families reside in the northern area of Stockton which is zoned to the Lincoln and Lodi School Districts. There are also a number of families that send their children to Catholic and other private schools.

Relative to the parents' educational level, only 5% of the parents of the sample possess a college degree or higher, while 26% of them had had some post high school training. High school graduates constitute 31% of the sample's parents. The rest had had some high school education or less. Eleven fathers were deceased and were excluded in the count. The raw figures represented by these percentages may be found in Table 2.

## Assessment Instruments

This study made use of three instruments and techniques. The Metropolitan Achievement Tests provided the reading scores while Dave's Interview Schedule and Rating Scales (SWCEL version) were used in assessing the educational environment in the home. Socio-economic status was measured by computing the Index of Status Characteristics (ISC) as developed by Warner, Meeker, and Eells.

### The Metropolitan Achievement Tests (MAT)

Pursuant to the annual state achievement testing program, SUSD administered the Metropolitan Achievement Tests

Table 2

Description of Sample According to Parents' Educational Level

| | Eight Years or less of School | Some High School Education | High School Graduate | Some Post High School Training | College Graduate | Some Post Graduate Work | Advanced Degree MA, LLB, DDS etc. |
|---|---|---|---|---|---|---|---|
| Grade 3 | | | | | | | |
| Father | 10 | 6 | 15 | 11 | 2 | 0 | 0 |
| Mother | 10 | 8 | 15 | 13 | 1 | 1 | 0 |
| Total | 20 | 14 | 30 | 24 | 3 | 1 | 0 |
| Grade 5 | | | | | | | |
| Father | 4 | 9 | 15 | 10 | 2 | 0 | 1 |
| Mother | 7 | 12 | 12 | 14 | 2 | 1 | 0 |
| Total | 11 | 21 | 27 | 24 | 4 | 1 | 1 |

to all the elementary school students in May, 1978. Widely used in the United States, the MAT is organized in six levels or batteries, covering grades one through twelve. SUSD used the Primary II Battery for Grade Three while the Intermediate Battery was given to Grades Five and Six. The reading section of the Primary II Battery contains tests on word knowledge, word analysis, and reading comprehension. Word knowledge and reading comprehension are the main areas tested in the Intermediate Battery.

Exclusively reviewing the reading achievement portion of the MAT, Robinson considers the test series "one of the best survey tests on reading achievement on the market today, carefully planned, carefully tested, and well produced."[1] The test norms are based on large samples of pupils matching the national school population with respect to such factors as geographic region, size of city, socio-economic status and general mental ability. The high reliabilities evident in Table 3 and a measure of validity that has been obtained through careful study of curricula, judgment of experts and repeated experimentation support the acceptance of the MAT as a dependable measure of reading achievement of the children in this study.

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[1]H. A. Robinson, "Metropolitan Achievement Tests: Reading," Reading: Tests and Reviews (ed.) O. K. Buros (New Jersey: Gryphon Press, 1968), pp. 311-312.

Table 3 presents reliability data for the Primary II and Intermediate Batteries. Split-half (odd-even) coefficients, corrected by the Spearman-Brown formula, Saupe's estimate of Kuder-Richardson Formula 20 reliability, and the standard error of measurement in terms of standard score are given.

Table 3

Reliability Coefficients and Standard Error of Measurement of the MAT Reading Subtests[2]

| | Primary II Level | | | Intermediate Level | | |
|---|---|---|---|---|---|---|
| Test Subjects | $r_{ke}$ | $r_{tt}$ | Std. Error of Meas. SS | $r_{ke}$ | $r_{tt}$ | Std. Error of Meas. SS |
| Word Knowledge | .93 | .95 | 2.5 | .92 | .93 | 3.4 |
| Word Analysis | .90 | .93 | 2.8 | -- | -- | -- |
| Reading | .93 | .95 | 2.7 | .93 | .93 | 3.8 |
| Total Reading | .96 | .97 | 1.9 | .96 | .96 | 2.7 |

Dave's Interview Schedule and Rating Scales

Dave's instrument is a measure of the educational environment in the home. The home environment is viewed, not

[2]W. N. Durost, Metropolitan Achievement Tests, Teacher's Handbook (New York: Harcourt Brace Jovanovich Inc., 1971), p. 16.

as a single entity, but as a number of sub-environments operating to influence specific behavioral characteristics. The educational environment in the home is a sub-environment conceived to be related to educational performance.

In order to collect data on the educational environment in the home, Dave developed an interview schedule within the framework of six environmental process variables he identified from theoretical and empirical literature. The interview schedule underwent several tryouts and revisions, and as Dave explains

> The final interview schedule contains sixty-three questions. Most of these questions have sub-questions for the purpose of eliciting precise and comprehensive responses. The questions included in the schedule are designed to obtain specific evidence about the different variables and their process characteristics.[3]

Each of the six process variables has been further delineated in terms of process characteristics. Twenty-one process characteristics were identified and rating scales were developed for each of them. Each rating scale extends from one to nine, with one as the lowest rating and nine, the highest. The alternative points of each scale, namely points one, three, five, seven and nine, are described briefly to aid the rater in making objective and reliable judgments. Ratings for the process characteristics are combined into scores for each process variable and these six scores

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[3]Dave, op. cit., p. 46.

are in turn totaled to yield a single score that is the Index of Educational Environment (IEE).

The environmental process variables and their corresponding process characteristics appear in Table 4. Also listed therein are the numbers of the interview questions which provide information for the respective characteristics. The twenty-one rating scales are found in Appendix B.

Dave's instrument departs from traditional techniques. Through a personal interview with the parents the investigator can get deeper insights into environmental factors by probing in greater depth into ways by which parents and children interact in the various facets of home activities. It allows for the use of psychometric procedures in the treatment of environmental data.

Validity and reliability estimates of Dave's instrument have been reported to be satisfactory. Construct validity was established by demonstrating that the relationship between educational achievement and IEE is greater than that between educational achievement and the sociological status characteristics of social class, occupation of the father, and education of the parents. Dave adds the following validity information:

> The correlation between Index of Educational Environment and the total achievement scores, which is .799, indicates the predictive validity of the instrument, where the total achievement score is the criterion variable. The correlation indicates that the proportion of variance of the criterion

Table 4

The Environmental Process Variables, Process Characteristics and their Related Questions in the Interview Schedule

| Environmental Process Variables | Environmental Process Characteristics | Question Number in the Interview Schedule |
|---|---|---|
| 1. Achievement Press | 1a. Parental aspirations for the education of the child | 4, 5, 37, 38, 40, 43 |
| | 1b. Parents' own aspirations | 40, 41, 42, 43 |
| | 1c. Parents' interest in academic achievement | 6, 7, 23, 24, 46 |
| | 1d. Social press for academic achievement | 44, 45 |
| | 1e. Standard of reward for educational attainment | 4, 13, 49, 52 |
| | 1f. Knowledge of the educational progress of the child | 2, 3, 51, 54, 55 |
| | 1g. Preparation and planning for the attainment of educational goals | 46, 47, 48, 50, 52, 53, 62 |
| 2. Language Models | 2a. Quality of the language usage of the parents | determined by total verbal response during interview |
| | 2b. Opportunities for the enlargement and use of vocabulary and sentence patterns | 7, 9, 25, 26, 27, 28, 29, 30, 34, 36 |
| | 2c. Keenness of the parents for correct and effective language usage | 14, 18, 31, 34, 35 |

Table 4. Continued

| Environmental Process Variables | | Environmental Process Characteristics | Question Number in the Interview Schedule |
|---|---|---|---|
| 3. Academic Guidance | 3a. | Availability of guidance on matters relating to school work | 21, 22, 52, 54, 55, 57 |
| | 3b. | Quality of guidance on matters relating to school work | 2, 3, 16, 21, 22, 23, 25 |
| | 3c. | Availability and use of materials and facilities related to school learning | 11, 17, 18, 19, 20, 22 |
| 4. Activeness of the family | 4a. | The extent and content of the indoor activities of the family | 7, 10, 26, 27 |
| | 4b. | The extent and content of the outdoor activities during weekends and vacations | 6, 7, 8, 9, 27 |
| | 4c. | Use of TV and such other media | 32, 33 |
| | 4d. | Use of books, periodical literature, library and such other facilities. | 7, 10, 14, 31 |
| 5. Intellectuality in the Home | 5a. | Nature and quality of toys, games, and hobbies made available to the child | 12, 13 |
| | 5b. | Opportunities for thinking and imagination in daily activities | 7, 15, 16, 25 |

Table 4. Continued

| Environmental Process Variables | Environmental Process Characteristics | Question Number in the Interview Schedule |
|---|---|---|
| 6. Work Habits in the Family | | |
| | 6a. Degree of structure and routine in the home management | 57, 58, 59, 60 |
| | 6b. Preference for the educational activities over other pleasurable things | 53, 56, 57, 61, 62, 63 |

variable accounted for by the Index of Educational Environment is .638.[4]

To further study the predictive validity of the environmental measure, modification of the predictor and criterion variables was performed. The resulting multiple and canonical correlations did not prove to be significantly higher than the simple correlation between the IEE and the total achievement scores when tested at the .05 level, and represent the extensions of the predictive validity.

The reliability of the instrument was estimated by using Hoyt's method that utilizes a two-way analysis of variance. The reliability coefficient obtained was .95. Dave also studied the stability of the results in relation to sample size (60) and deduced that the results obtained from the sample in his study were reasonably stable, and hence reliable.

The Index of Status Characteristics (ISC)

The Index of Status Characteristics is primarily an index of socio-economic factors. It can also serve as a more simply applied technique for estimating social class. Two propositions are put forth by the authors in support of ISC as a measure of social class:

1. Economic and other prestige factors are highly important and closely correlated with social class; and

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[4]Dave, op. cit., p. 75.

2. These social and economic factors such as talent, income, and money must be translated into social-class behavior acceptable to the members of any given social level of the community.[5]

An Index of Status Characteristics for any family can be obtained by three basic steps:

1. Rating the status characteristics that constitute the ISC,
2. Obtaining a weighted total of these ratings,
3. Converting this weighted total into social-class equivalence.

Making the Ratings. Primary ratings are made on either three or four of these status characteristics: occupation, source of income, house type, and dwelling area. No ISC should be computed if data on more than one status characteristic are lacking. A seven-point scale is used to rate each of the four status characteristics, with a "very high" status rating of 1 to a "very low" status rating of 7. The rating scales for source of income, house type and dwelling area are briefly enumerated in Table 5. The more detailed descriptions given by Warner and associates were used to guide the ratings of these status characteristics in the present study. The revised rating scale for occupation has more involved classifications and is given in Appendix F.

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[5]Warner, et al., op. cit., p. 39.

Table 5

Scales for Rating Source of Income, House Type, and Dwelling Area

| Rating | Source of Income | House Type | Dwelling Area |
|---|---|---|---|
| 1 | Inherited Wealth | Excellent | Very High |
| 2 | Earned Wealth | Very Good | High |
| 3 | Profits and Fees | Good | Above Average |
| 4 | Salary | Average | Average |
| 5 | Wages | Fair | Below Average |
| 6 | Private Relief | Poor | Low |
| 7 | Public Relief | Very Poor | Very Low |

Table 6

Weights for Computing the Index of Status Characteristics

| Status Characteristic | All Ratings Available | Occupation Missing | Source of Income Missing | House Type Missing | Dwelling Area Missing |
|---|---|---|---|---|---|
| Occupation | 4 | - | 5 | 5 | 5 |
| Source of Income | 3 | 5 | - | 4 | 4 |
| House Type | 3 | 4 | 4 | - | 3 |
| Dwelling Area | 2 | 3 | 3 | 3 | - |

Obtaining a Weighted Total. The ratings obtained on the status characteristics are each assigned a weight, multiplied by their respective weights, and then combined into a single numerical index which can be any number from 12 to 84 inclusive. Table 6 shows the weights for when four or three status characteristics are used.

Converting Weighted Total into Social Class Form. The final procedure is to ascribe a probable social class position to the family being rated. Even the authors did not find setting up the social class equivalents an easy task. This is understandable since the relationship between social class (as measured by actual social participation and social reputation) and socio-economic status, while presumably fairly close in most American communities, could vary from community to community in the precise nature of the relationship. The presence of ethnic minority groups in the community can doubtlessly affect the nature of this variation. A further refinement of the Index was therefore undertaken and an adaptation of the ISC was made for the factor of ethnicity. The conclusion was reached that by treating ethnic minorities as Old Americans no serious errors of overpredictions or underpredictions would result.

From among the three alternative suggestions that the authors make for converting the ISC into an equivalent social class, the one indicated for Old Americans was selected for this study. For this purpose the classifications

recommended were condensed into these broad categories: upper, middle, and lower levels. Table 7 following shows the social class equivalents of the ISC ratings used.

Table 7

Social Class Equivalents for ISC Ratings

| Weighted Total of Ratings | Social Class Equivalents |
|---|---|
| 12 - 24 | Upper |
| 25 - 53 | Middle |
| 54 - 84 | Lower |

As mentioned earlier, further refinements and modifications were designed to improve the accuracy of prediction. An 85% accuracy of prediction on Old Americans substantiated the validity of ISC and a correlation coefficient of $r$ = .97 disclosed an essentially linear relationship between ISC and the Evaluated Participation method of ascertaining social class through interview and analytic techniques.

## Collection of the Data

Preliminary procedures involved obtaining permission to gather the necessary data from the SUSD Office of Research and Evaluation and from the parents. (See Appendix C for a copy of the letter to parents.) All the children whose

parents agreed to be interviewed were included in the sample. Only one letter came back signifying the desire of the parents not to be interviewed.

Follow-up telephone calls were made to confirm the interview time suggested by the parents or to arrange for another time that was mutually agreeable. The telephone calls helped boost the number of parents who acceded to participate in the study and expedited the replacement of parents who did not want to be interviewed.

The Interview

Most of the interviews were conducted during the day with only the mother present. Several evening interviews were held and both parents were often present in these. Each interview lasted approximately an hour. Although it was sometimes necessary to redirect the comments of the parents to the question at hand, the comments were useful in evaluating the language proficiency of the parents and sometimes even helped in expanding their views on other questions in the interview schedule.

The parents were asked all the questions that are in the SWCEL list. (See Appendix A.) The respondents' replies were recorded in longhand or taped whenever permission was given to do so. The responses were then later rated according to the rating scales provided for each process characteristic. This was done as soon as possible, usually

at the end of each day, in order to insure accuracy of rating.

Demographic Data

Accompanying each letter to the parents was an information sheet requesting information regarding the parents' occupation (to help determine SES) and their place of birth (to establish PGS). (See Appendix D.) Information given in this sheet was again verified at the start of the interview. Data on the parents' educational level was obtained in the course of the interview. The question on PEL was posed as the parents talked about their educational aspirations for and expectations of their child. This was done in consideration of the fact that many Filipino parents might be somewhat hesitant to put such information down on paper but would talk more freely about the same in an interview situation and in relation to their children's own education.

Socio-Economic Status

The SES of each family was determined by computing the ISC from ratings given to each of these three status characteristics: father's occupation, dwelling area and house type. Each characteristic was rated on a scale of 1 (highest) to 7 (lowest) and each rating was then multiplied by its assigned weight. The status characteristics and their respective weights are as follows:

occupation ..... 5

house type ..... 4

dwelling area ..... 3

As mentioned earlier, the occupation of the father was taken from the information sheet filled out by the parents. Where the father is deceased or the mother is the only parent living in the household, the mother's occupation is used as the criterion.

Ratings for house type were given by the researcher herself during the home interview visits. Less than half a dozen interviews, however, had to be conducted at the place of employment (during the lunch hours) of the mother and this necessitated actual visits to the home sites in order to arrive at an appropriate rating for the house type.

Evaluation of the dwelling area was based on the City of Stockton Census Tract for 1975 (Appendix E). A corresponding rating was given as the census tract for each student's address was located.

Reading Achievement

The reading achievement data used in this study were the total reading scores the children obtained on the MAT during the close of the 1977-78 school year. The scores were made accessible to the researcher by the SUSD Research and Evaluation Office upon presentation of the parents' signed consent forms and the approval of the Coordinator of the Office of Research and Evaluation. The scores available were in percentile form and were converted into standard scores

to facilitate statistical treatment.

## Statistical Treatment of the Data

Two basic statistical procedures were employed in analyzing the data in this study. The Pearson Product-Moment procedure was used to test the hypotheses appertaining to the relationship between reading achievement and each of the six IEE variables as well as the total IEE rating. The same procedure was applied in determining whether any significant relationship existed between the dependent variable of reading achievement and the classificatory variables, SES, PEL, PGS, and sex.

A number of one-way Analyses of Variance (ANOVA) tested the relationship between Grades Three and Five on the different IEE variables as well as the presence of systematic differences between the means of the two levels of the demographic variables. Throughout the study, the .10 level of confidence was considered significant.

One hypothesis tested for significant differences between two independent variables, the relationship between the educational environment in the home and reading achievement at the two grade levels. An r to Fisher Z transformation was performed, followed by a critical z test.

The computer program used to analyze all the data for this study was the Statistical Package for the Social

Sciences for B6700 Version H. The data were analyzed at the computer facilities of the University of the Pacific.

## Summary

The principal intent of this study was to investigate the relationship between the educational environment in the home and reading achievement of Filipino-American children at two grade levels using environmental process variables as the measure of educational environment. The sample consisted of ninety-six children from nineteen schools in SUSD. Data on the home environment were gathered by means of home-conducted interviews with the parents of the sample using Dave's Interview Schedule and Rating Scales. Reading achievement measures were derived from the total reading scores on the Metropolitan Achievement Tests. The socio-economic status was computed using Warner's Index of Status Characteristics with demographic data coming from information sheets filled out by parents. Statistical treatment of the data included Pearson correlational computations and one-way Analysis of Variance using the .10 level of significance. The results of these analyses are discussed in the following chapter.

# Chapter IV

## PRESENTATION AND ANALYSIS OF THE DATA

This research study was designed to investigate the relationship between educational environment in the home and reading achievement at the third- and fifth-grade levels. The relationship between reading achievement and demographic variables such as socio-economic status, parents' educational level, parents' generational status and sex was also examined. The sample consisted of ninety-six Filipino-American children attending classes in the Stockton Unified School District.

The Pearson Product-Moment and the Analysis of Variance were the principal statistical methods used, and the .10 level was chosen to establish statistical significance. Following a brief description of the variables investigated in this study the statistical analyses of the hypotheses tested are presented and discussed.

### The Variables

A total of twelve variables were identified and included in the present study. They are listed with their means and standard deviations in Table 8 (Grade 3) and Table 9 (Grade 5).

Table 8

Descriptive Statistics for the Variables Included in the Study for Grade Three

| Variable Number | Variable Name | Mean | Standard Deviation |
|---|---|---|---|
| 1 | Index of Educational Environment | 4.57 | .55 |
| 1a | Achievement Press | 4.69 | .56 |
| 1b | Language Models | 4.44 | .59 |
| 1c | Academic Guidance | 4.63 | .63 |
| 1d | Activeness of the Family | 4.49 | .59 |
| 1e | Intellectuality in the Home | 4.49 | .69 |
| 1f | Work Habits in the Family | 4.63 | .67 |
| 2 | Socio-economic Status | 60.62 | 11.49 |
| 3 | Parents' Educational Level | 2.77 | 1.16 |
| 4 | Parents' Generational Status | 1.48 | .50 |
| 5 | Sex | 1.48 | .50 |
| 6 | Reading Achievement | 62.46 | 10.41 |

Table 9

Descriptive Statistics for the Variables Included in the Study for Grade Five

| Variable Number | Variable Name | Mean | Standard Deviation |
|---|---|---|---|
| 1 | Index of Educational Environment | 4.68 | .56 |
| 1a | Achievement Press | 4.85 | .62 |
| 1b | Language Models | 4.51 | .52 |
| 1c | Academic Guidance | 4.51 | .61 |
| 1d | Activeness of the Family | 4.61 | .61 |
| 1e | Intellectuality in the Home | 4.59 | .58 |
| 1f | Work Habits in the Family | 4.85 | .69 |
| 2 | Socio-economic Level | 58.75 | 12.95 |
| 3 | Parents' Educational Level | 3.00 | 1.01 |
| 4 | Parents' Generational Status | 1.44 | .50 |
| 5 | Sex | 1.52 | .50 |
| 6 | Reading Achievement | 74.15 | 11.34 |

The first variable, Index of Educational Environment, is the summarizing variable for the process variables enumerated as 1a through 1f and represents the total measure of educational environment in the home. The process characteristics that comprise each process variable were rated on a nine-point scale. The ratings for the process variables equaled the sum of the ratings for their respective process characteristics. The ratings for the process variables were combined to secure the total IEE rating.

For easier cursory comparisons the means and standard deviations given in Tables 8 and 9 were obtained from a linear transformation of the ratings into a scale of 1 to 9, with 9 as the highest rating. From the clustering of the means around the midpoint one can infer the presence of a satisfactory degree of positive family interaction patterns in the home environment of the sample in this study.

Except for Reading Achievement the rest of the variables are demographic in nature. The ratings for Socioeconomic Status (SES) were arrived at using Warner's Index of Social Characteristics. Both the SES means for the third and fifth grades fall within the lower SES range of 54-84. Less than one-third of the total sample belonged to the middle SES classification; none qualified for the upper SES stratum.

Seven categories were used to establish the Parents' Educational Level (PEL). (Refer to Table 2, Chapter 3.)

The father's and mother's educational qualifications were averaged to yield a single PEL rating. Where only one parent lived in the household, his/her rating was used as the PEL rating. Eight years or less of schooling was given the lowest rating of 1 and an advanced degree, the highest rating of 7. A rating of 3 was for a high school graduate and, as is reflected in Tables 8 and 9, the average PEL for Grade 5 was a high school graduate while for Grade 3 it was slightly lower.

The sample for each grade was almost equally divided on the variables of Parents' Generational Status (PGS) and Sex. PGS was either of two categories: native or non-native.

The ratings for the dependent variable, Reading Achievement, were expressed in standard scores and were based on the children's performance on the Metropolitan Achievement Tests. The standard score mean of 62.46 for Grade 3 converts into a grade equivalent of 3.6, slightly lower than the expected norm of 3.9. The Grade 5 standard score mean of 74.15 has a grade equivalent of 5.0, practically a whole grade below the normally expected score at the end of the fifth grade. A standard score of 80.5 would have a grade equivalent of 5.9.

## Testing of the Hypotheses

The first four hypotheses investigated the relationship between reading achievement and the home environment

variables. Hypotheses Five through Eight examined the relationship between reading achievement and socio-economic status, parents' educational level, parents' generational status and sex.

Hypotheses One

There is no relationship between the measure of educational environment in the home and reading achievement of Filipino-American pupils in Grade Three.

As indicated in Table 10, a correlation of $r = .57$ was obtained between the Index of Educational Environment and reading achievement for the third-grade sample. This significant correlation between the total rating on home environment and reading achievement is strongly corroborated by the individual correlations for each of the six environmental process variables. Even when socio-economic status, which is often associated with academic achievement, was held constant the correlational significance between the process variables and reading achievement did not diminish. High correlations were also found between each of the process variables and the total IEE rating. As shown in Table 10, all the correlations are significant at the .001 level, except for one variable, Language Models, which is significant at the .01 level. These results confirm the anticipated positive correlation between home environment and reading achievement, and, on the basis of the data

Table 10

Correlations Between Environmental Process Variables, Index of Educational Environment and Reading Achievement - Grade Three

| Environmental Process Variables | IEE | Reading Achievement | Reading Achievement with SES Held Constant |
|---|---|---|---|
| Index of Educational Environment | - | .57* | .65* |
| Achievement Press | .95* | .52* | .59* |
| Language Models | .87* | .35** | .36*** |
| Academic Guidance | .87* | .49* | .49* |
| Activeness of the Family | .94* | .56* | .63* |
| Intellectuality in the Home | .89* | .53* | .55* |
| Work Habits in the Family | .84* | .62* | .63* |

* $p < .001$, one-tailed test

** $p < .01$

*** $p < .006$

presented, Hypothesis One is rejected.

Hypothesis Two

There is no relationship between the measure of educational environment in the home and reading achievement of Filipino-American pupils in Grade Five.

Rejection of this null hypothesis is plainly indicated by the figures in Table 11. The total IEE correlation as well as the correlation of the separate process variables with reading achievement are all significant at the .001 level of probability. Controlling for the effects of socio-economic status resulted in slightly lower correlation coefficients but this did not alter the significance level of the correlation.

Just as in the case of Hypothesis One, the results for this hypothesis attest to the expected predictive ability of home environment factors as they relate to reading achievement. The evidence clearly suggests that family life is an important consideration in school achievement.

Hypothesis Three

There is no mean difference between Grade Three and Grade Five in relation to the following environmental process variables:

1. Educational Environment in the Home (IEE)
2. Achievement Press

Table 11

Correlations Between Environmental Process Variables, Index of Educational Environment and Reading Achievement - Grade Five

| Environmental Process Variables | IEE | Reading Achievement | Reading Achievement with SES Held Constant |
|---|---|---|---|
| Index of Educational Environment | - | .77* | .56* |
| Achievement Press | .94* | .70* | .66* |
| Language Models | .91* | .58* | .50* |
| Academic Guidance | .93* | .68* | .62* |
| Activeness of the Family | .93* | .72* | .68* |
| Intellectuality in the Home | .81* | .77* | .74* |
| Work Habits in the Family | .86* | .80* | .77* |

* $p < .001$, one-tailed test

3. Language Models
4. Academic Guidance
5. Activeness of the Family
6. Intellectuality in the Home
7. Work Habits in the Family

Hypothesis Three compared the ratings for each of the process variables and the total IEE for Grade Three with those for Grade Five through the use of Analysis of Variance procedures. The ANOVA data for each of the seven variables are reported in Tables 12 - 18. These tables show that the F-ratios obtained do not approximate the critical F-value of 2.75 set for the .10 level of significance.

Failure of the F-test to achieve significant results is indicative of the similarity in the home environments of the Grade Three and Grade Five samples. It contradicts the contention that the educational environment in the home changes with age and grade level. It would seem that a two-year difference in the age and grade level of the child does not effect any substantial difference in the kind of parent-child interactions occurring in the home. Put another way, the educational environment of the home of either a third-grade or a fifth-grade child in the sample is essentially the same. Consequently, Hypothesis Three is retained in its entirety.

Table 12

Analysis of Variance for Index of Educational Environment Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | 119.26 | 1 | 119.26 | .880 | p > .10 |
| Within | 12730.23 | 94 | 135.43 | | |

Table 13

Analysis of Variance for Achievement Press Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | 31.51 | 1 | 31.54 | .182 | p > .10 |
| Within | 1627.23 | 94 | 17.31 | | |

Table 14

Analysis of Variance for Language Models Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | .84 | 1 | .84 | .284 | p > .10 |
| Within | 278.64 | 94 | 2.96 | | |

Table 15

Analysis of Variance for Academic Guidance
Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | 3.01 | 1 | 3.01 | .856 | p > .10 |
| Within | 330.39 | 94 | 3.51 | | |

Table 16

Analysis of Variance for Activeness of the Family
Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | 7.59 | 1 | 7.59 | 1.314 | p > .10 |
| Within | 543.06 | 94 | 5.78 | | |

Table 17

Analysis of Variance for Intellectuality in the Home
Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | 1.50 | 1 | 1.50 | .914 | p > .10 |
| Within | 154.12 | 94 | 1.64 | | |

Table 18

Analysis of Variance for Work Habits in the Family
Between Grade 3 and Grade 5

| Source | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Grade Levels | 4.59 | 1 | 4.59 | 2.49 | p > .10 |
| Within | 173.39 | 94 | 1.84 | | |

Hypothesis Four

The correlation between educational environment in the home and reading achievement in Grade Three is equal to the correlation between educational environment in the home and reading achievement in Grade Five.

To test Hypothesis Four an r to Fisher Z transformation was made for each correlation coefficient. Then a z-ratio was computed using the following formula:[1]

$$z = \frac{Z_1 - Z_2}{\sigma_{z_1 - z_2}} \quad \text{where}$$

$$\sigma_{z_1 - z_2} = \sqrt{\sigma^2_{z_1} + \sigma_{z_2}} = \sqrt{\frac{1}{n_1 - 3} + \frac{1}{n_2 - 3}}$$

A critical z-ratio of 1.645 is required for significance between correlations at the .10 level.

Table 19 enumerates the correlation coefficients and their corresponding Fisher Z-value and z-ratios. A z-ratio of 1.76 was obtained between the Grade Three and Grade Five home environment-reading achievement correlations. This value is greater than the necessary 1.645 to show a significant difference at the .10 level. Hence, Hypothesis Four is rejected.

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[1]Kenneth D. Hopkins and Gene Glass, Basic Statistics for the Behavioral Sciences (New Jersey: Prentice-Hall Inc., 1978), p. 293.

Table 19

Comparative Grade Correlations Between the Index of Educational Environment and the Process Variables and Reading Achievement

| Variable | Grade 3 | | Grade 5 | | z-ratio* | Level of Significance |
|---|---|---|---|---|---|---|
| | r | Fisher $Z_3$ | r | Fisher $Z_5$ | | |
| Index of Educational Environment | .57 | .648 | .77 | 1.02 | 1.76* | $p < .10$ |
| Achievement Press | .52 | .576 | .70 | .867 | 1.42 | $p > .10$ |
| Language Model | .35 | .365 | .58 | .662 | 1.41 | $p > .10$ |
| Academic Guidance | .49 | .536 | .68 | .829 | 1.39 | $p > .10$ |
| Activeness in the Family | .56 | .633 | .72 | .905 | 1.30 | $p > .10$ |
| Intellectuality in the Home | .53 | .590 | .77 | 1.02 | 2.04** | $p < .05$ |
| Work Habits in the Family | .62 | .725 | .80 | 1.10 | 1.77* | $p < .10$ |

* a z-ratio of z = 1.645 is required for significance at the .10 level.

** z-ratio = 1.96, .05 level.

A breakdown of the correlations by process variables, however, reveals that the z-ratios obtained for four process variables (see Table 19) did not reach statistical significance. Only the correlations for Intellectuality in the Home ($p < .05$) and Work Habits of the Family ($p < .10$) were found to be significant.

Hypothesis Five

There is no relationship between socio-economic status and reading achievement.

Grade Three. Retention of this hypothesis for Grade Three is strongly indicated by a correlation of $r = -.03$ obtained by means of the Pearson Product-Moment procedure. (See Table 23.) This finding is further supported by an F-ratio of .953 between the two SES levels as disclosed in Table 20. The reading mean scores and their standard deviations appear in Table 22.

The above finding seems to run counter to the assertion in numerous studies that SES is significantly related to school achievement. The results for Hypothesis One revealed that the home environment produced a significant difference in reading achievement. Because SES is generally recognized to be closely associated with home environment, (the correlation matrix shows a correlation of $r = .61$, $p < .001$ between SES and IEE), a partial correlation was computed, holding the home environment (IEE) constant. Having

controlled for the influence of IEE on both variables, the resultant correlation proved to be quite significant. (See Table 23.) It seems apparent that in the earlier years of schooling the effects of SES are diffused into a variety of learning-related factors in the home environment and are masked by active parent-child interactions.

Grade Five. In the case of Grade Five, Hypothesis Five is rejected. Both simple and partial correlations between SES and reading achievement were found to be significant, although when IEE was partialled out, as shown in Table 24, the correlation between the variables decreased.

Table 21 shows an F-ratio of 5.843, significant at the .10 level. This fact denotes that the fifth grade sample children from the higher socio-economic level tended to achieve higher reading scores.

The data above seem to suggest that other factors associated with SES may have some adverse effect on achievement but high IEE influence compensates for these negative effects. The import of IEE for Grade Five is shown to be very pronounced.

Hypothesis Six

There is no relationship between parents' educational level and reading achievement.

Grade Three. As Table 23 shows, the correlation pattern between reading achievement and PEL duplicates that

Table 20

Analysis of Variance Source Table for Reading Achievement by Socio-Economic Status - Grade Three

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between SES Levels | 103.361 | 1 | 103.361 | .953 | $p > .10$ |
| Within | 4990.556 | 46 | 108.490 | | |
| Total | 5093.917 | 47 | | | |

Table 21

Analysis of Variance Source Table for Reading Achievement by Socio-Economic Status - Grade Five

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between SES Levels | 681.167 | 1 | 681.167 | 5.843 | $p < .10$ |
| Within | 5362.812 | 46 | 116.583 | | |
| Total | 6043.979 | | | | |

Table 22

Reading Mean Scores by Socio-Economic Status

| Socio-economic Status | Grade 3 | | | Grade 5 | | |
|---|---|---|---|---|---|---|
| | $\bar{X}$ | SD | N | $\bar{X}$ | SD | N |
| Middle SES | 65.00 | 8.27 | 12 | 79.73 | 10.89 | 15 |
| Low SES | 61.61 | 11.01 | 36 | 71.61 | 10.76 | 33 |

Table 23

Simple and Partial Correlations Between Reading Achievement and the Demographic Variables Grade 3

| | Simple Correlation | | | Correlation where IEE is held constant | | |
|---|---|---|---|---|---|---|
| Variable | r | P | N | r | P | N |
| SES | -.03 | .41 | 48 | .49 | .001 | 48 |
| PEL | .05 | .38 | 48 | -.45 | .001 | 48 |
| PGS | .10 | .24 | 48 | -.04 | .38 | 48 |
| Sex | .11 | .23 | 48 | .09 | .27 | 48 |

Table 24

Simple and Partial Correlations Between Reading Achievement and the Demographic Variables Grade 5

| | Simple Correlation | | | Correlation where IEE is held constant | | |
|---|---|---|---|---|---|---|
| Variable | r | P | N | r | P | N |
| SES | -.40 | .002 | 48 | .26 | .04 | 48 |
| PEL | .51 | .001 | 48 | -.17 | .12 | 48 |
| PGS | .07 | .31 | 48 | -.16 | .15 | 48 |
| Sex | .33 | .01 | 48 | .13 | .19 | 48 |

between reading achievement and SES. Since the correlation coefficient of .05 is non-significant at the .10 level, the null hypothesis is retained. A non-significant F-ratio of .096 between the PEL levels was also obtained. (Refer to Tables 25 and 27.)

Like SES, PEL has been found in many research studies to be predictive of school achievement and is often associated with home environment. There is a positive correlation of $\underline{r} = .46$, $\underline{p} < .001$ between PEL and IEE in this study (see Appendix G ). Eliminating the contaminating effects of home environment (IEE) through partial correlation did result in a highly significant correlation between reading achievement and PEL, $\underline{r} = .45$, $\underline{p} < .001$. It seems like the effects of PEL, like those of SES, are negatively affected by other factors but are counterbalanced by a greater impact of the home environment process variables.

Grade Five. Unlike the above finding, a significant correlation ($\underline{r} = .51$, $\underline{p} < .001$) was found between reading achievement and PEL (Table 23). Table 26 shows an equally significant F-ratio between the two PEL groups. On the basis of these data the null hypothesis is rejected. Table 27 statistically verifies that the sample children whose parents have had education beyond high school performed better in reading than those whose parents have had lesser education. Controlling for the influence of home environment did reduce the correlation impact of PEL on reading achievement.

Table 25

Analysis of Variance Source Table for Reading Achievement and Parents' Educational Level - Grade Three

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between PEL Levels | 10.607 | 1 | 10.607 | .096 | $p > .10$ |
| Within | 5083.309 | 46 | 110.507 | | |
| Total | 5093.917 | 47 | | | |

Table 26

Analysis of Variance Source Table for Reaching Achievement and Parents' Educational Level - Grade Five

| Source of Variation | Sume of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between PEL Levels | 478.568 | 1 | 478.568 | 3.95 | $p < .10$ |
| Within | 5565.411 | 46 | 120.987 | | |
| Total | 5043.979 | 47 | | | |

Table 27

Reading Mean Scores by Parents' Educational Level

| Parents' Educational Level | Grade 3 | | | Grade 5 | | |
|---|---|---|---|---|---|---|
| | $\bar{X}$ | SD | N | $\bar{X}$ | SD | N |
| Post High School | 61.82 | 8.73 | 17 | 78.22 | 9.92 | 18 |
| High School or Lower | 62.81 | 11.35 | 31 | 71.70 | 11.58 | 30 |

Hypothesis Seven

There is no relationship between parents' generational status and reading achievement.

Grade Three. A simple correlation coefficient of $r = .10$ and a partial correlation coefficient of $r = -.04$ (Table 23) both fell far short of achieving significance for a reading achievment-PGS relationship. The slight difference in the reading mean scores between the native and non-native groups was similarly not significant (Tables 28 and 30). The null hypothesis is therefore retained. It is quite evident that for this set of subjects the parents' generational status plays an inconsequential role in the development of the child's reading ability.

Grade Five. Further evidence for the absence of a significant relationship between reading achievement and PGS is furnished by the correlation data for Grade Five in Table 24. The reading mean scores in Table 30 for the two PGS groups, as supported by a very small F-ratio (see Table 29), did not prove to be significantly different. An inference that can be made here is that whether a child's parents are Philippine-born, American-born, or a combination of both is not related to his reading performance. For this grade Hypothesis Seven is retained.

Hypothesis Eight

There is no relationship between sex and reading achievement.

Table 28

Analysis of Variance Source Table for Reading Achievement and Parents' Generational Status - Grade Three

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between PGS Levels | 54.104 | 1 | 50.104 | .494 | $p > .10$ |
| Within | 5039.812 | 46 | 109.561 | | |
| Total | 5093.917 | 47 | | | |

Table 29

Analysis of Variance Source Table for Reading Achievement and Parents' Generational Status - Grade Five

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between PGS Levels | 30.762 | 1 | 30.762 | .235 | $p > .10$ |
| Within | 6013.217 | 46 | 130.722 | | |
| Total | 6043.979 | 47 | | | |

Table 30

Reading Mean Scores by Parents' Generational Status

| Parents' Generational Status | Grade 3 | | | Grade 5 | | |
|---|---|---|---|---|---|---|
| | $\bar{X}$ | SD | N | $\bar{X}$ | SD | N |
| Native | 61.44 | 9.55 | 25 | 74.85 | 12.28 | 27 |
| Non-native | 63.56 | 11.38 | 23 | 73.24 | 10.22 | 21 |

Grade Three. This hypothesis is retained since neither a simple nor a partial correlation revealed any statistically significant relationship between reading achievement and sex. (See Table 23.) Table 31 discloses an F-ratio that is much less than is needed to produce a significant difference in the reading mean scores between the boys and the girls in the third grade sample. The girls' mean score, however, is slightly higher (Table 33). Contrary to the results of many investigations in the area of sex differences and academic performance, the Grade Three data did not provide any evidence to indicate that sex is predictive of reading achievement.

Grade Five. The correlation figures in Table 24 present a differing picture for the Grade Five subjects. There is a slight positive relationship between reading achievement and sex. The null hypothesis is therefore rejected. The ANOVA data in Table 32 state that there is a significant difference between boys and girls in their reading achievement. As Table 33 indicates, the reading mean scores favor the girls. Partialling out home environment (IEE), however, lowered the correlation to non-significance implying that the girls had higher IEE scores than the boys. Again the strong effects of IEE are seen to be operating in the sex-reading achievement relationship.

Table 31

Analysis of Variance Source Table for Reading Achievement and Sex - Grade Three

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Sex Levels | 62.939 | 1 | 62.939 | .575 | $p > .10$ |
| Within | 5030.977 | 46 | 109.369 | | |
| Total | 5093.917 | 47 | | | |

Table 32

Analysis of Variance Source Table for Reading Achievement and Sex - Grade Five

| Source of Variation | Sum of Squares | df | Mean Square | F | Level of Significance |
|---|---|---|---|---|---|
| Between Sex Levels | 651.670 | 1 | 651.670 | 5.559 | $p < .10$ |
| Within | 5392.310 | 46 | 117.241 | | |
| Total | 6043.979 | 47 | | | |

Table 33

Reading Mean Scores by Sex

| | Grade 3 | | | Grade 5 | | |
|---|---|---|---|---|---|---|
| Sex | $\bar{X}$ | SD | N | $\bar{X}$ | SD | N |
| Male | 61.36 | 11.22 | 25 | 70.30 | 10.25 | 23 |
| Female | 63.65 | 9.56 | 23 | 77.68 | 11.33 | 25 |

## Summary

The relationship of reading achievement to both environmental process variables and demographic variables was explored in this study. Statistical procedures applied to the eight hypotheses tested yielded the following results:

1. High correlational data for both third and fifth grades lend credence to the predicted relationship between reading achievement and the educational environment in the home. The evidence maintains that for the Filipino-American children sampled in this study the quality of family activities and interactions is related to reading achievement.

2. ANOVA figures showed no significant difference between the educational environment in the home of the third grade subjects and that of the fifth graders. Essentially, the same type of home conditions appears to obtain for both groups.

3. The correlation between educational environment in the home and reading achievement for the third-grade children varied significantly from that for the fifth grade. This result reversed the hypothesized expectation that the correlation would diminish with age and grade level. That the home environment exerts a progressive influence on school performance, at least in the elementary

years and for this particular sample, is borne out by this finding.

4. Socio-economic status and parents' educational level, while found to be significantly related to reading achievement for the fifth grade sample, did not reach statistical significance for the other grade. But when the effects of home environment (IEE) were partialled out, both variables assumed positive correlations with reading achievement.

5. Of all the demographic variables studied, parents' generational status came out least useful as a predictor of reading achievement.

6. Data on reading achievement-sex relationship was somewhat conflicting. For the fifth grade a slight correlation was discerned between the two variables. This result did not hold true for the third grade. This lack of statistical support for a positive achievement—sex relationship reflects most results of previous research. In both grades, the girls obtained higher reading mean scores than the boys.

The above findings reinforce the widely accepted notion that home environment is directly related to academic performance. The interview schedule and rating scales seemed to have provided a more reliable and encompassing means of including various characteristics of family interaction deemed relevant to school achievement.

The next and final chapter summarizes the study

and presents pertinent interpretations and discussions of the findings. Several inferences and recommendations for future research will be made.

# Chapter V

# SUMMARY, DISCUSSION, AND IMPLICATIONS

## Summary

The influence of the environment has been an integral part of the theories of growth and development. But the question of how precisely the environment affects the development of behavioral characteristics such as educability has not yet been satisfactorily answered. Educators are still struggling with the problem of trying to reduce differences in educational performance to differences of natural endowment. Research is not wanting in attempts to point to the home as a sub-environment crucial to a child's learning. Extensive studies such as the Equal Educational Opportunity Report (EEOR), the National Assessment of Educational Progress (NAEP), and the International Studies in Evaluation suggest the educational impact of the home background and note that (a) family background directly relates to school achievement, (b) an appreciable prediction of reading achievement is provided by information on home and family backgrounds, and (c) variation in achievement can be more often substantially accounted for by family background than by school factors.

Review of Literature

The field of test and measurement has placed much emphasis on the study and measurement of individual differences. In contrast, relatively little has been done to measure the environment (with which the individuals interact), such as the home. There has been a dearth, not only of instruments for measuring environmental differences, but especially of measures that directly indicate the qualities of particular environments that relate to specific behaviors such as academic performance. Bloom opines that much of what has been termed individual variation may in fact be explained in terms of environmental variation.

The research literature reviewed on the assessment of home environment has identified two sets of environmental variables most often used as indices of home environment. Earlier research efforts focused on measuring the home environment in terms of social status characteristics such as father's occupation, parents' education, income, and social class position. Family structure characteristics like, sex, birth order, and number of siblings have been used as well. These "static variables," however, besides being of little functional value to the educator, often accounted for only a small proportion of the variability in the children's educational performance. A considerable amount of variability in the scholastic achievement of the children within the same status level, for instance, remained largely unexplained.

More recently, a new conception of the environment has emerged. No longer is the environment viewed simply as a set of static characteristics but rather as a set of interactive forces which affect the development and maintenance of particular behavior characteristics. The environment is conceived of as consisting of many dimensions, each related to the development of a specific characteristic. One such dimension, pertinent to the educational performance of the child, is the educational dimension of the home. It is a specific component of the total home environment. This sub-environment may be described by such specific interactive elements such as communication with adults, language models, and incentives for achievement, and by the extent that the child interacts with and makes use of these elements. The description and measurement of environmental differences in these operational terms characterize research studies undertaken in the last two or three decades.

A set of "environmental process variables," as opposed to "static variables," has been utilized to assess the home environment of children and found to correlate consistently with IQ as well as academic performance. The pioneering works of Wolf and Dave on the use of environmental process variables--those processes and forces operating in the home environment which may influence the educational development of the child--as a measure of home environment has been widely duplicated. And the results of these studies have been generally compatible with Wolf's and Dave's findings.

Dave's list of six environmental process variables and 21 process characteristics was selected for use in the present study. The six process variables that constitute Dave's Index of Educational Environment are: (1) Achievement Press, (2) Language Models, (3) Academic Guidance, (4) Activeness of the Family, (5) Intellectuality in the Home, and (6) Work Habits in the Family.

The use of environmental process variables has been shown to provide a more relevant description of specific aspects of the educational environment in the home. Its superiority over the use of the more general static variables is buttressed by many factors:

1. the environmental process variables have been identified from the theoretical and empirical literature in the fields of child development, socialization, learning and motivation;

2. each process variable is further delineated in terms of environmental process characteristic;

3. a rating scale is used for each process characteristic (Dave uses a nine-point scale);

4. an interview schedule with one or both parents is conducted in the home;

5. responses to the interview questions provide pertinent data on interpersonal behavior patterns between parent and child; and

6. treating environmental data through the use of psychometric measures makes possible relating these data more systematically to other measurements of the individual.

## Purpose of the Study

This correlational study sought to investigate the relationship between the educational environment in the home and reading achievement among a sample of Filipino-American third-grade and fifth-grade pupils. A secondary purpose was to examine the relationship between reading achievement and such sociological correlates as socio-economic status, (SES) parents' educational level (PEL), parents' generational status (PGS), and sex.

## Hypotheses

The first four major hypotheses pertained to the environmental process variables as they relate to reading achievement. Hypotheses One and Two predicted a lack of relationship between the Index of Educational Environment and reading achievement in Grades 3 and 5, respectively. Hypotheses Three compared the educational environments in the home of the third- and fifth-grade samples. Hypothesis Four tested for significant relationships between the third-grade and fifth-grade home environment-reading achievement correlations. The ancillary hypotheses were enumerated as Hypotheses Five through Eight and predicted non-significance in the relationship between reading achievement and each of the following sociological variables: SES, PEL, PGS, and sex.

## Population, Data, and Instrumentation

The sample of this study consisted of 48 third-grade

and 48 fifth-grade Filipino-American children attending the Stockton Unified School District during the 1977-78 school year. Data on the home environment were derived from home-conducted interviews with the parents using Dave's Interview Schedule and Rating Scales. The demographic data were gathered partly from the interview but mostly from an information sheet previously filled out by the parents. Reading achievement was indicated by standard scores on the Metropolitan Achievement Tests (MAT) administered towards the end of the school year. The Index of Status Characteristics (ISC) developed by Warner and Associates was used to determine the socio-economic status of the sample population.

Research Methodology

The present study is essentially a correlational study. The Pearson Product-Moment procedure was used to test for significant correlations between reading achievement and the environmental process variables. Simple and partial correlations were employed in determining the relationship between reading achievement and the demographic variables of socio-economic status (SES), parents' educational level (PEL), parents' generational status (PGS), and sex. The Analysis of Variance procedure was used to compare the two grade levels on the different home environment variables and on the total Index of Educational Environment. One-way ANOVAS also tested for differences between reading achievement and the different levels of SES, PEL, PGS, and sex.

Summary of Findings

The focus of concern of the four major hypotheses in this study was the relationship between reading achievement and the home environment variables. Positive correlations of $r = .57$, significant at the .001 level, for Grade 3 (Hypothesis One) and $r = .77$ ($p < .001$) for Grade 5 (Hypothesis Two) substantially support the predicted relationship between reading achievement and the educational environment in the home. This evidence supports the thesis that the type and amount of interaction occurring in the home between the child and the adults are of consequence to the child's reading achievement.

Hypothesis Three compared the home environments of the Grade 3 and the Grade 5 samples. The F-ratios obtained revealed no significant difference between them. It may be deduced that the educational environment in the home remains relatively stable during the elementary school years, at least for this particular group of children.

The question of whether reading achievement correlates more highly with the educational environment in the home for the Grade 3 or Grade 5 subjects was tested by Hypothesis Four. Using the z-test for independent correlations, a z-ratio of 1.76 was obtained and found the Grade 5 reading achievement-home environment correlation to be significantly higher than the Grade 3 correlation between reading achievement and home environment.

The four minor hypotheses correlated reading

achievement with the classificatory variables of socio-economic status (SES), parents' educational level (PEL), parents' generational status (PGS), and sex. SES and PEL correlated significantly with reading achievement for the Grade 5 children but not for the third-grade group. However, when home environment (IEE) was held constant, the correlations attained significance.

The one variable that did not correlate with reading achievement in either grade was PGS (Hypothesis Seven). The parents' place of birth and residence in their earlier years was unrelated to the child's ability to achieve in reading.

Hypothesis Eight resulted in a significant correlation between reading achievement and sex for Grade 5 but not for Grade 3. With home environment partialled out, even the Grade 5 correlation was reduced to non-significance. The girls in both grades, however, had higher reading mean scores.

## Discussion of Findings

### Reading Achievement and the Educational Environment in the Home

The present study demonstrated a high level of relationship between reading achievement and the educational environment in the home. The environmental process variables correlated highly with each other, with the total Index of Educational Environment (IEE), and with reading achievement with and without socio-economic status held constant. (See Tables 10 and 11 and Appendices G and H.) The magnitude of the correlation suggests the plausibility of at least two

explanations. The first seems to be the validity and the reliability of IEE. A wide range of home environment factors that appear to be truly germane to the educational development of the child are included in the instrument. Six environmental process variables and twenty-one process characteristics run the gamut of questions asked from whether the mother read to the child and how often to the quality and quantity of parental assistance accorded the child in doing homework and other school-oriented activities. As to reliability, in about a dozen other studies which used Dave's IEE or similar environmental process variables, the correlations obtained between the environmental measures and achievement measures have been consistently high.

The high correlations may be attributed to a second reason: the parents' perception of the child. When a parent perceives his child positively responding to educational stimuli in the home or elsewhere, he may, consciously or unconsciously, strive to enhance the educational atmosphere that he can provide in the home. Hence, if a child begins to display an interest in books, the mother might quite naturally surround him with a variety of books and other reading materials. As Dave explains,"A stimulating educational environment in the home may influence the academic growth of the child, but the capacity of the child to profit from such an environment may influence the parental efforts in providing a stimulating environment."[1] The manner, therefore, by which the parents

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[1]R. Dave, op. cit., p. 135.

attend to the educational development of the child seems to be contingent to some extent on the child's responsiveness to the educational stimuli in the environment.

An examination of the order of importance of the environmental process variables in explaining the variability in reading achievement shows that the highest correlations were obtained for Work Habits in the Family in both Grades 3 and 5. This variable reflects the degree of structure and routine present in the home management and the preference given to educational activities over activities which are wholly pleasurable in nature. It may be that, if established and adhered to in the early growing years, two things can help equip the child with the essential attitudes and habits which, when pooled with other skills, make a superior reading ability an achievable goal:

1. the distribution of duties and responsibilities and the punctuality and discipline with which they are carried out, and

2. the priority given to delayed gratification in favor of more intellectual and educational tasks.

It was not uncommon to hear parents state during the interview that their children had specific duties expected of them and that these were promptly discharged. Many children also spent a good portion of their off-school hours on homework, often without being told, and engaged in activities for fun and amusement only after all school work had been accomplished.

Reading Achievement and SES

Data on the Grade 5 students in the present study upheld several findings that socio-economic status (SES) is positively related to academic performance. SES correlated highly with reading achievement for the fifth grade subjects. In contrast, the third grade data revealed no significant correlation between the two variables. It has been suggested that SES is a summarizing variable; it summarizes variations in attitudes, motivations, and value systems that are related to academic achievement. Thus social level may determine the range and nature of academic stimulation provided through books and other educational play and family activities. The discrepancy between the two sets of data may find partial explanation in the high IEE ratings of the pupils and in the fact that some Filipino cultural characteristics may have been operating and overriding the effects of SES, especially during the early years of schooling. One such characteristic is the high value most Filipino parents place on education. This attitude seems to permeate all levels of SES. It is not unusual then for Filipino-American parents to acquire a variety of reading materials for their children, to allow them to engage in recreational activities and visit places of interest, to set up a daily study schedule, and to actively help with homework and other school-related activities. Such efforts are far more easily realized with younger children.

On the other hand, as the child grows older and the

mastery of an ever increasing complexity of skills becomes an apparent necessity, the limitations imposed by SES become much more difficult to circumvent. Parents who work in the fields cannot easily accommodate the kind of direct assistance needed with more abstract intellectual tasks. The various factors associated with social class such as aspirational levels, opportunities for intellectual expression and language style begin to exert a more definite influence on the child's performance in school.[2]

In this connection, another Filipino cultural characteristic may have strongly interacted with SES and the other factors related to achievement. The acquiescent, God-knows-best attitude of most Filipino-American parents would easily restrict further efforts on the part of both parents and child to overcome learning barriers and to improve the child's lot. Once aware of the general capability of their child, these parents are often willing to accept the status quo. Their eagerness to let their child make the best of available educational opportunities during the earlier years would sooner or later give way to accepting the fact that their child can only do so much, that such fate is God-given and humanly difficult to alter. Most of the parents' responses to particular interview questions attest to this lack of belief in one's ability to manipulate and direct life circumstances. To

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[2]Gordon Miller, Educational Opportunity and the Home (London: Longman Group Limited, 1971), p. 25.

illustrate, many low SES parents did not give any definite answers to questions that asked for how much schooling they wished and expected their child to receive. If at all they did, some of them went only as far as two years college, a great many specified high school, and mostly all were conditioned by such phrases as "if God permits," "depending on circumstances," "if he (the child) wants to," "as long as opportunities are open to him," and "as long as he can handle it." An interplay of fatalism and the parents' perception of the child seems to be transpiring in these instances.

Reading Achievement and PEL

The statistics on reading achievement--PEL relationships in this study have been found to be strikingly similar to those between reading achievement and SES. The same explanation proffered in the previous section appears to appropriately apply to the results of the correlations between reading achievement and parents' educational level. The parents' attitude toward education seemed to be the overriding factor in the non-significant relationship between reading achievement and PEL among the third grade sample.

The effects of low PEL seem to be more easily compensated for children in the early school years. Parents with even the minimum of education and cognizant of the value of education, as most of the parents in this study were, often would not find helping with third grade homework that threatening or trying simple educational games with their children too

intimidating. But better educated parents can do the same and more. It is not as arduous a job for them to maintain through the years an intellectually stimulating environment and to inspire their children to higher aspirational and achievement levels. Sugarman describes these parents as those who more naturally take greater interest in their children, provide them with more intrinsic and extrinsic rewards, and openly encourage them to do better.[3]

Reading Achievement and PGS

It was anticipated that the generational status of the parents of the children in this study would positively relate to reading achievement. The assumption was held that those parents born and raised in the Philippines would have a set of attitudes, beliefs and motivations different enough from those born in the United States and elsewhere and that the difference would be significantly reflected in their children's reading achievement. In neither Grade 3 nor Grade 5 was this assumption given credence. Certain cultural patterns associated with Filipino upbringing such as docility, deference to authority, fatalism and closely-knit kinship do seem to stand in contrast with the Anglo characteristics of independence, straightforwardness and internality in locus of control. Apparently, the distinction between

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[3]B. H. Sugarman, "Social Class and Values Related to Achievement and Conduct in School," Sociological Review, XIV (1966), 290.

native and non-native PGS as defined in this study was not sufficient basis to assess the degree of acculturation that is considered to influence school performance. A more valid acculturation measure may well include other factors such as length of exposure to the American culture both here and in the Philippines and a scaled categorization of specific values and attitudes.

Reading Achievement and Sex

The findings on the relationship between reading achievement and sex in this project did not distinctively demonstrate the girls' superiority in achievement over boys which most previous research studies have indicated. While the girls obtained higher reading mean scores in both grades 3 and 5, the differences found were only marginally significant in Grade 5 and not at all in Grade 3. And when home environment (IEE) was partialled out the correlation was reduced to insignificance. The question then still remains as to whether the recorded difference in the reading achievement of boys and girls are real or more likely the artifacts of one's culture and schools. The partial correlations did show the important influence of home environment and dozens of other studies suggest both physiological-biological-maturational as well as socio-cultural-educational factors as possible contributory causes of sex differences in academic achievement.[4] Perhaps other relevant

[4]Dale Johnson, "Cross-cultural Perspectives on Sex Differences in Reading," The Reading Teacher, XXXIX (May, 1976), p. 747.

questions need to be raised in order to specify the sources of the differences. Longitudinal studies that probe into the developmental patterns of over- and underachievement for males and females and into the significance of academic success and its relation to occupational success for both sexes may be worthy of further investigation. From the results of this study, however, it cannot be stated with assurance that sex is a valid indicator of reading achievement.

## Implications for Education

The research described in this study echoes and further documents the importance of family life to school achievement. It has shown that the home environment--the center of family life--can be described and measured in terms of process variables and thus dependably explain a substantial proportion of the variability in the educational achievement, especially in reading, among children. Implications for two powerful agencies in the life of the child--the school and the home--seem obvious.

### Implications for the School

An area of applicability of the present findings is academic prediction. Environmental profiles can be developed from the ratings on the process variables, either in quantitative or qualitative form, and used to estimate the general educational level of the child. In the elementary grades the prediction of academic performance based on environmental

variables would be more for diagnosis and remediation rather than for purposes of admission and selection. The academic prediction made in the initial years of schooling may provide opportunity for the educator to help those children who are not or have not been able to achieve up to their capacity, particularly in reading, due to educationally deficient home environments.

Information furnished by environmental profiles may also be found useful in

1. tentative groupings of children, especially in the absence of any previous achievement data,

2. the development of pertinent teaching strategies,

3. the selection of appropriate instructional materials, and

4. the development of educational prescriptions for individual as well as small groups of students.

Curriculum planners, Wolf observes, have often emphasized the importance of securing adequate information about the milieu in which students live in order to help the planning and development of school curricula.[5] The use of environmental data could facilitate such undertaking. Since many of the process characteristics which compose the home environment evidently are educationally malleable, teachers and other school officials

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[5] R. Wolf, op. cit., p. 108.

should explore the possibility of providing a full range of valuable curricular experiences to children whose home environments are less than substantial.

Even as this study saliently points to the vital role of the home in the academic performance of children, the school must not relent in its efforts to realize the goals of an effective educational system. The teaching of skills and attitudes associated with reading should receive prime attention. If reading is logically taught as a communication process, if language development and critical thinking are simultaneously emphasized, and if what the child brings to school by way of knowledges, attitudes, and abilities is given due consideration, more than likely the chance for reading success would be greatly enhanced.

The findings in this study also draw attention to the need for the school and the home to form a partnership to ensure a successful educational experience for every school child. Schools then might profitably develop programs to make parents more aware of the importance of home environment to the reading achievement of children. Parents must be assisted in improving home stimulation in the interest of better reading performance. Results of research carried out to determine the effectiveness of different means of encouraging parental interest should be seriously studied and applied.

Implications for the Home

Outside of the school, the home is the other key agency performing the function of providing the child with an educational environment that can well promote or inhibit school learning. The findings of this study strongly suggest that child rearing practices which parents utilize have a crucial impact on the child's reading achievement. Such practices are not likely to be significantly influenced by the generational status of the parents nor by differences in the sex of the children. Likewise, it appears that they do not necessarily depend on the social status level of the parents or the amount of education they possess.

The environmental process variables and process characteristics that describe the educational environment in the home can give helpful hints as to how parents may stimulate and strengthen the educational climate of the home. They can help increase parents' awareness that factors such as academic guidance, family indoor and outdoor activities, and achievement motivation can conceivably be controlled or changed into desirable directions. They can provide clues as to specific practices related to such considerations as duties and responsibilities asked of the child, the nature of toys, games, and hobbies provided to the child, the quality and extent of verbal interaction between parent and child. Mere availability of reading materials and other educational facilities in the home does not guarantee the development of reading skills on the part of the child but

the manner in which they are effectively put to use may spell the difference between reading success and failure.

Caution must be taken, however, that dramatic changes in the reading performance of the child are not equated with the mechanical and superficial introduction of the environmental variables in the home. These variables need to be included in a comprehensive program of parent education before their impact on reading development may begin to manifest itself. Relative to this, the schools and other community agencies may have to play an active role in reaching most parents and putting such a program into effect.

## Implications for Future Research

Several avenues for further investigation seem to emanate from this study. They will be grouped and discussed under these three areas: 1) the need for more environmental studies, 2) improving the present environmental measure, and 3) expanding follow-up studies for wider applicability.

### More Environmental Studies

The educational environment in the home was the specific component of the total home environment considered in this study. Other sub-environments of the home such as the physical and the social, which presumably affect the physical, intellectual and social development of the child, as well as their probable relationships and interaction with the educational environment are worthy of exploration. Various

processes and forces affect the physical and behavioral development of the child. A more comprehensive study of the different environments present in the home may reveal their significance in the different aspects of human development.

In the same vein, the educational environment in the home may be regarded as one component of the total educational environment of the child. Studying the other components such as the school environment, the classroom environment, the educational environment among the peer groups and in the community might reveal the relative importance of these different educational sub-environments at different stages of learning and help expand existing knowledge about variability in educational achievement. Role perceptions and role relationships are elements of these sub-environments that may be gainfully studied and may provide useful information in furthering the understanding of educational behavior.

The need to study more types of environment finds a parallel in the need for developing instruments and procedures to measure environments. Since environmental differences are now more often seen as major antecedents of individual differences, it appears imperative to focus research efforts on the development of approaches and devices for measuring environments.

## Improving Dave's Scales

Without discounting their validity the efficacy of Dave's rating scales may be reinforced through some modifications. One of these is for follow-up studies to use independent responses for each of the subscales (process characteristics) instead of the suggested way of recording and scoring the same response of the parent for a number of different subscales. Another would be the identification and inclusion of other effective variables and characteristics and the possible elimination of others. Further research can be geared towards making the environmental measure more efficient and less time consuming.

The modifiability of the environmental variables and their characteristics merit additional study. Variables like Activeness of the Family or Achievement Press appear to be more easily modifiable than others like Language Models and Intellectuality in the Home. This quality of modifiability necessitates further research, the outcomes of which should prove useful in providing more effective guidance to parents in improving the educational environment in the home.

## Wider Applicability

Because Dave's approach to the study of home environment is a relatively new approach in the field many ways of replicating the present study present themselves. More empirical evidence is needed to substantiate the value

of studying the home environment through such instruments as Dave's.

Varying several elements in the research design may help answer some of the questions left unanswered in this study. Modifications in the population sample, in the variables studied, and the methodology employed may yield information that can be both theoretically and practically valuable.

Population. Presumably, this may be the first study of home environment using an exclusively Filipino-American sample. Follow-up studies should include more Filipino-American samples, larger in size, with different grade levels represented, and with a broader distribution of homes on the social class scale. A majority of the sample in the present study were classified low SES and none belonged to the high SES category.

With an ever-growing body of evidence pointing to the early years of life as crucial to learning and the development of many lifelong behavioral patterns, studying the home environment of preschool children would be of value to these involved in early childhood education. Longitudinal studies in this respect, with junior and senior high school students at the opposite end of the time continuum, may produce relevant comparative data about the influence of the educational environment in the home at different stages of instruction.

Samples involving combinations of ethnic and non-ethnic groupings may also elicit results that may put on more solid grounds the generalizability of the results of this project and the reliability of the environmental measure as well. The educational environment in the homes of Japanese-American and Chinese-American school children awaits research exploration.

Variables. The problem of whether home environment relates more highly with reading achievement or with math achievement, or whether verbal skills are more easily affected by environmental factors than are number or reasoning skills has not been thoroughly investigated. Studies, too, on the relationship between the home environment and certain personality attributes often linked with educational achievement, such as self-esteem, learning style and achievement motivation, are meager and need more empirical support. The differential influence of the home environment on these learning variables needs further research.

Methodology. From a methodological standpoint this study has implications for the further development and improvement of instruments for measuring environmental differences. With particular reference to the one used in the present study, empirical variations and revisions of the instrument can represent useful additions to our sparse knowledge of environmental differences and their measurement.

It is possible that the use of at least another interviewer, with a joint effort at rating, might result in

a more accurate measure for a given home. Consideration should also be given to the father as a source of information. In the main, previous studies derived information from the father only incidentally, only if he happened to be home during the interview. This study was no exception. Separate interviews with the father and mother by the same and/or different interviewers at the same and/or different times raise the possibility for varied combinations which might be profitably used in investigating the educational environment in the home.

Dave's instrument has not been used with the child as an interviewee. With minor changes in the wordings of the interview questions, the interview may also be conducted with the child. This would permit the researcher the opportunity to compare the differences in the home environment as perceived by the parents and the child. The interview might include not only the child whose achievement level is being studied but other siblings as well. Thus, a wider range of interactions among children and parents may be accurately assessed.

Another suggestion stems from the undue length and complexity of the interview schedule and rating scales. Perhaps an abbreviated version of the instrument similar to Garber's Home Environment Review (HER) could be as effective and valid as the original. Shorter interviews with more individuals may generate a wider-based set of criteria for more precise comparisons of home environments.

Much is yet to be known regarding the myriads of variables that are constantly interacting and affecting the child's educational behavior. This study suggests that only through more rigorous research can we gather such useful environmental information as would allow the isolation of the tractable aspects of the environment, the development of strategies for remediating and preventing environmental deficiencies, the implementation of more effective patterns of child rearing, and a more profound understanding of the complexity of environment-organism interactions.

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# APPENDIX A

## PARENTS' INTERVIEW SCHEDULE

SOUTHWESTERN COOPERATIVE EDUCATIONAL LABORATORY, INC.

Parent Interview
Richard M. Wolf USC
SWCEL Revision 9/67

Statement of Purpose: This is a study of differences in environmental backgrounds of fifth year elementary school children. We are trying to get an estimate of the variety of home situations in your community. The reason for this is to have the schools take this kind of information into account in planning educational programs. Thus, this study is for research purposes to aid in teaching your child more effectively. We guarantee that we won't give this personal information, as such, to the school!

Please answer as best you can.

1. How many children do you have? What are their ages? Sexes: In what grades are they? In what schools: Note: If not in school, determine whether employed and/or separated from the family. Note, record information on opposite side.

Pointing out the subject: We are going to talk about your fifth grade child (name him). We will probably be referring to the others on occasion, but our discussion will be mainly about .... (name).

2. How is he doing in school? In which subject do you think he will do best? In which do you think he will do worst?

   Best:_____ Worst:_____

3. What subject do you think he will improve in?

   Most:_____ Least:_____

4. How has he/she done in school so far? What grades would you like him to get? What grades do you expect he will get?

   Expect:_____ Satisfy:_____

5. How do your other children generally do in school?

6. What organizations or clubs, if any, do you belong to (PTA, church, political, etc.)?

   Does your child know what you do in these organizations? _____Yes _____No How?

7. What are your favorite recreation pastimes? Your husband's? What recreational activities do you and your family engage in on weekends together? What places have you visited on weekends during the past six months? Why?

8. Do you usually plan your weekends and vacations ahead of time? How often? Who makes the plans?

9. Where have you, as a family, traveled during the past two years? Why were these places chosen? What specific activities take up most of your time at these places?

10. What newspapers and/or magazines do you subscribe to? Do you encourage your child to read them? If so, how? Do you discuss the articles or stories in them in his presence? (Give examples). Does your child ever participate in these discussions vs. listening?

11. Does your child take any lessons--musical, dance, academic subject? If so, what? How long has he taken these? How did he get started in this area?

12. What hobbies, if any, does your child have? How long has he been interested in this?
What seemed to get him started in this area? (Note parent initiation)

13. What kinds of toys, games, books, pamphlets, etc. have you bought for your child in the past two years? (Include birthdays and holidays) Give examples. Preschool period? -- list.

14. Does your child have a library card? If so, how long has he had it? How did he come to get this card? (Note parent initiation)
Do you remember the first few times he went to the library? Did anyone accompnay him? Who?
What kind of books have you encouraged him to read?
What else does he obtain reading material? Do you still read to him? Does he read to you? How often?

15. What appliances do you permit him to operate? How long have you allowed this?

16. Do you ask your child problems related to school subjects that he is required to answer or solve on his own? Give examples.

17. Does your child have a desk of his own? If not, where does he study? What kinds of supplies are available for him to work with? (Observe)

| | | |
|---|---|---|
| _____paste | ____compass | ____ruler |
| _____paper | ____protractor | ____crayons |
| _____paints | ____others (specify) | |

18. Do you have a dictionary in your home? If so, what kind? Does your child have a dictionary of his own? If so, what kind? Where are they kept?
How often does your child use the dictionary? How often do you? When the child uses the dictionary, at whose initiation--his or yours?
What other ways does your child have of learning new words? School, relatives, etc.

Home dictionary: ____Yes ____No
Child's dictionary: ____Yes ____No

19. Do you have an encyclopedia in your home? If so, when did you get it? Why? Do you buy yearbooks to accompany the encyclopedia? Where is it usually kept? How often do you use it? How often does your child use it?

20. Do you have an almanac or fact book? If so, when was it purchased? Who uses it? When?
What other sources of reading material does your child have available to locate answers to his questions--library, friends, etc.?

21. Do you have any workbooks or other kinds of learning materials which you use to help your child in his learning?
What other steps, if any, do you take to insure that your child keeps up in his school work?

22. Does your child receive homework? Do you help him with these assignments? How much time do you find to work with him on these assignments per week? How much time do you and your husband spend providing direct help to your child in his school learning on weekdays? On weekends? Also ask for preschool and primary grades.

23. How often do you and your husband discuss your child's progress in school? What generally results from such discussions?

24. Have you had any experience in teaching? What? Your husband?

25. When does your child usually eat dinner on weekdays?
Who eats with him?
Who does most of the talking at the dinner table?
About what?

26. At what other times are you together as a family on weekdays? What are some of the things you do together at these times?

27. What are some of the activities you husband engages in with the child on weekdays? On weekends?

28. Are there any adults outside of you and your husband that your child is particularly friendly with? If so, what does he seem to like about them? What do you see as this person's special qualities?
How often does your child see them? What does he do when he's with them?

29. Did any other adults live with you when your child was young? If so, who? How long did they live with you? What was the age of the child when they left? (Note: If the child was close to them, ask the following question): How much schooling did they have? How would you rate their use of language?

30. Did you have a job outside the home when your child was younger? If so, who took care of the child?

31. Did you read books to him when he was younger? If so, when did you start? When did you stop? How regularly did you read to him?

32. About how many hours a week does he usually watch TV? What are his favorite programs? Do you approve of them? If not, what do you do about them?

33. What are your favorite TV programs? Did you recommend that your child watch any particular programs in the past week? If so, which ones? Did you discuss any programs with him after watching them?

34. How would you describe your child's language usage? Do you help him to increase his vocabulary? If so, how? How have you helped him to acquire appropriate use of words and sentences?
Are you still helping him in these respects? If so, how?

35. How much would you estimate you correct him in his speech? Ex. use of "ain't" etc. How particular are you about your child's speech? Are there particular speech habits of his that you are working on to improve? Give examples, if so. Earlier?

36. Do you speak any langauge other than English in the home? If so, which one? Does the child also speak this language?

37. How much schooling do you wish your child to receive?

38. How much schooling do you expect your child to receive?

39. What is the minimum level of education that you think your child must receive?

40. Do you have any ideas about the kind of work you would like to see your child do when he grows up? Do you have any ideas about the kind of work you would not like your child to do?

41. How does your husband feel about the kind of work he's doing? Is this the kind of work he always wanted to do?

42. How do you feel, in general, about the accomplishments of your family? How far have you been able to accomplish the aspirations or plans with which both of you started your family life?

43. How important has education been in achieving these goals? How much importance is education going to have in the life of your child? Would this future status be radically affected if he does not attain the level of education you wish him to attain?

44. What is the educational level of some of your close friends and relatives?

45. Do any of their children go to college or have they? Are there any who did not attend college? Are there any who did not complete high school?

46. Have you met with your child's present teacher? If so, when? Why? Does the teacher usually initiate parent-teacher conferences? If you ask for a meeting, for what purpose? What other ways, if any, are you in contact with the school?

47. Do you know your child's best friends in the neighborhood and school? Do you approve of them? How would you rate these children in their studies? Do you help your child in choosing his friends? If so, how?

48. Do you have your child read biographies of great people? If so, whose? Has he read any biographies in the past two months? If so, whose?

49. Did you hug, kiss or speak approvingly to your child in the past few days? If so, for what reasons?

50. What are some of the activities and accomplishments of your child that you praise and approve of? How do you do this? What things do you find you have to scold him for?

51. Have you thought about what kind of high school program you want your child to enroll in? If so, which one? Why?

52. How often does the school give out report cards? Who usually signs it? Do both parents see it? In what ways do you use the report card?

53. Do you discuss his school grades with him? What particular things do you discuss with him?

54. Do you have college plans for him? If so, what have you done to financially prepare for this? In what other ways, if any, do you prepare him for the attainment of educational goals? (e.g., acquaint him with colleges, telling him about what people learn in college, etc.).

55. About how often do you ask your child how well he is doing in school? What particular things do you ask him?

56. Do you know what textbooks he uses in different subjects in school? Do you know at the beginning of the school year what things he will be studying during the year in each subject? If so, how do you find this out? (Note: get specific topics, not subjects, e.g., reading.)

57. How much time do you think a child in fifth grade should devote to his studies outside of school each day?

58. Is there any regular amount of time you have your child study each day? How regularly is it followed?

59. Does he help you in the routine housework? If so, what responsibilities does he have? How punctually does he carry them out?

60. Is the housework distributed among the members of the family? If so, what did the planning for such assignments? How regularly are these assignments followed? What factors, if any, come in the way of carrying out such plans?

61. How would you rate your child's habit of completing his work on time, not leaving a problem undone, correcting his mistakes, etc.?
How did he acquire these habits?

62. Do you ever have to change your own plans for the sake of your child's school work? If so, what kinds of plans have you had to change?

63. Have you had to sacrifice any of your major needs or desires such as buying a new car, giving up a job, etc. for the present and/or future education of your child? If so, what did you give up? What were the immediate consequences?

64. Are you taking any courses or involved in a hobby? If so, what? How did you get involved in this? How are you doing it--formally or informally? Did you study any subjects or have a hobby during the past two years? If so, what?

# APPENDIX B

## SCALES FOR RATING EDUCATIONAL ENVIRONMENT

# APPENDIX

## SCALES FOR RATING EDUCATIONAL ENVIRONMENT

### Rating Scales

There are twenty-one rating scales in all, as given in this appendix. Each rating scale is preceded by the name of the environmental process characteristic, the criteria for its measurement, and the serial numbers of the questions in the interview schedule that are based on the characteristic. The interview instrument given in Appendix may be consulted for the questions.

The descriptions of the alternative points on the scale given as cues to the rater had to be as brief and explicit as possible for their practical use. Therefore, they are often stated in the form of phrases or incomplete and abridged sentences. Their meaning, however, will become explicit when read in the context of the other parts of the scales and the criteria for the measurement of the process characteristic concerned.

1b. PARENTS' OWN ASPIRATIONS

Criteria: *Present accomplishments
*Means of the accomplishments
*Future aspirations

Questions: 40, 41, 42, 43

Rating Scale:

9 Very high accomplishments already attained. Education used as in the most important means of the accomplishments, or a very keen feeling for not having enough education. Still very high aspirations.

8

7 High accomplishments already attained. Education used as one of the chief means of the accomplishments, or a keen feeling for not having enough education. Still high aspirations.

6

5 Fairly high accomplishments already achieved. Education used as one of the chief means of the accomplishments, or a keen feeling for not having enough education. Still more, but moderate aspirations.

4

3 Moderate accomplishments. Education played only an incidental role in the accomplishments. Very moderate aspirations.

2

1 Little accomplishments. Education is not considered as a means of any possible accomplishments. Practically no future aspirations.

## 1c. PARENTS' INTEREST IN ACADEMIC ACHIEVEMENT

Criteria: *Extent of participation in the educational activities (e.g. reading, PTA)
*Keenness for the educational progress of the child

Questions: 6, 7, 23, 24, 46

Rating Scale:

9 Both parents very active in educational organizations and activities. Very particular about the educational progress of the child.

8

7 Both or anyone of the parents active in educational organizations and activities. Particular about the educational progress of the child.

6

5 Only one of the parents occasionally active in educational organizations and activities. Fairly particular about the educational progress of the child.

4

3 Only one of the parents occasionally active in educational organizations and activities. Not quite particular about the educational progress of the child.

2

1 None of the parents active in any educational organization or activity. Not at all particular about the educational progress of the child.

1d. SOCIAL PRESS FOR ACADEMIC ACHIEVEMENT

Criteria: *Education of the close relatives, parents, friends, and neighbors
*Education of their children

Questions: 44,45

Rating Scale:

9 All or most having four years of college and beyond. Their children of college age are in college.

8

7 Most having some college education. Many have finished all the four years. Most of their children of college age are in college.

6

5 Some having high school completed or above, and some having high school not completed. Some of their children of college age are in college.

4

3 Many having high school not completed. Most of their children of college age are not in college. Some have dropped out before completing high school.

2

1 Hardly any having high school completed. Their children of the college age are not in college. Most of them have dropped out before completing high school.

1e. STANDARDS OF REWARD FOR EDUCATIONAL ATTAINMENT

Criteria: *Valuing academic accomplishments
*Selection of gifts having educational value

Questions: 4, 13, 49, 52.

Rating Scale:

9 Academic accomplishments very highly and invariably praised. They are praised more than any other accomplishments. Very high expectations of educational achievement. Selection of gifts invariably having educational value.

8

7 Academic accomplishments are one of the most highly praised accomplishments. High expectations of educational achievement. Gifts very often having educational value.

6

5 Academic accomplishments are praised. Some other accomplishments are praised more. Moderately high expectations for educational achievement. Some gifts having educational value.

4

3 Academic accomplishments are occasionally praised. Some other accomplishments are praised highly. Moderate expectations of educational achievement. Gifts having educational value chosen only occasionally.

2

1 Academic accomplishments are not praised at all. Some other accomplishments are very highly praised. Very low expectations of educational achievement. Gifts hardly having any educational value.

## 1f. KNOWLEDGE OF THE EDUCATIONAL PROGRESS OF THE CHILD

Criteria: *Extent of knowledge of the child's educational progress
*Extent of knowledge of the textbooks used by the child and his courses of study.

Questions: 2, 3, 51, 54, 55

Rating Scale:

9 Detailed and up-to-date knowledge about the daily progress of the child in the school. Knowledge about the specific topics being studied or recently completed by the child in different subjects. Good acquaintance with all the textbooks used by the child.

8

7 Detailed knowledge about the daily progress of the child in the school. Knowledge about the general topics covered or being covered. Acquaintance with some of the textbooks.

6

5 General idea about the child's school progress in terms of subject-wise grades. Knowledge of the general topics covered in some of the subjects. Acquaintance with one or two textbooks.

4

3 Some gross idea about the child's school progress in terms of general grades. Knowledge of the subjects studied but not the topics. No acquaintance with textbooks.

2

1 No knowledge of the child's school progress. No knowledge of the textbooks or topics of study.

## 1g. PREPARATION AND PLANNING FOR THE ATTAINMENT OF EDUCATIONAL GOALS

Criteria: *Financial preparation
*Academic and mental preparation (e.g. emphasizing good grades as preparation for higher learning, selecting bright children as friends)

Questions: 46, 47, 48, 50, 52, 53, 62

Rating Scale:

9 Sound financial preparation. Also academic and mental preparation for higher learning.

8

7 A good financial preparation, or achievement of best grades in the hope of getting good scholarships for higher learning. Also fairly good academic and mental preparation for higher learning.

6

5 Moderate financial preparation, or a desire to do it but not yet done. Some efforts toward academic and mental preparation for higher learning.

4

3 Only incidental preparation. No definite plans made yet. Moderately high educational goals. However, the parents are aware of the need for doing financial and other preparation to reach the goals.

2

1 No financial or other preparation. Absence of any higher educational goals.

2a. QUALITY OF THE LANGUAGE USAGE OF THE PARENTS

Criteria: *Fluency of expression
*Pronunciation
*Vocabulary
*Organization of thoughts

Evidences: From the conversation with the mother during the interview.

Rating Scale:

(1) To rate each of the four criteria individually on the following scale, and (2) to take their average as the overall rating for this characteristic.

| | |
|---|---|
| 9 | Excellent |
| 8 | Very good |
| 7 | Good |
| 6 | A little above average |
| 5 | Average |
| 4 | A little below average |
| 3 | Quite below average |
| 2 | Poor |
| 1 | Very poor |

## 2b. OPPORTUNITIES FOR THE ENLARGEMENT AND USE OF VOCABULARY AND SENTENCE PATTERNS

Criteria: *Variety of opportunities (e.g. books, TV, travel, picnics, verbal interaction in home situations)
*Frequency of opportunities

Questions: 7, 9, 25, 26, 27, 28, 29, 30, 34, 36

Rating Scale:

9 A great variety of situations available frequently and consistently.

8

7 A good variety of situations available quite frequently.

6

5 A moderate variety of situations available fairly frequently.

4

3 Only a few situations available infrequently.

2

1 Very limited situations available.

2c. KEENNESS OF THE PARENTS FOR CORRECT AND EFFECTIVE LANGUAGE USAGE

Criteria: *Regularity in reading to the child during pre-school period
*Variety of efforts for increasing vocabulary, and correcting language usage, if needed.

Questions: 14, 18, 31, 34, 35

Rating Scale:

9 Read to the child very regularly, almost every day, from early childhood until he began reading himself. Some special reading to him still continues. The child is encouraged to read some special material to the parents and others. A great variety of efforts in increasing vocabulary and improving language usage.

8

7 Read to the child quite regularly, almost every day, for about 3 years or more before he began to read himself. Some occasional reading to him still continues. A good variety of efforts in improving his vocabulary and language usage.

6

5 Read to the child fairly regularly for two or three times a week for about 2 years or so. Some effort to improve vocabulary and language usage still continues.

4

3 Read to the child during the pre-school period occasionally and without any regularity. Incidental efforts to improve vocabulary and language usage.

2

1 Not read to child with any regularity at any time. Hardly any efforts to improve vocabulary and language usage.

3a. AVAILABILITY OF GUIDANCE ON MATTERS RELATING TO SCHOOL WORK

Criteria: *Extent of general supervision regarding school work
*Readiness in guidance when asked for
*Suggestions regarding school work

Questions: 21, 22, 52, 54, 55, 57

Rating Scale:

9 Very regular general supervision regarding school work. Guidance made readily available when asked for. Suggestions given to the child regularly regarding the betterment of school work at the parents' initiative. Both parents provide the guidance and suggestions.

8

7 Regular general supervision regarding school work. Guidance available most of the times when asked for. Suggestions given to the child sometimes, regarding the betterment of school work, at the parents' initiative. Both parents provide the guidance and suggestions.

6

5 Fairly regular supervision regarding school work. Guidance sometimes available. Suggestions given to the child regarding the betterment of the work, only occasionally. Only one of the parents provides guidance and suggestions.

4

3 Occasional supervision regarding school work. Guidance only occasionally available. Suggestions given to the child regarding the betterment of the work very occasionally.

2

1 No supervision regarding school work. No guidance or suggestions available for improvement of work.

## 3b. QUALITY OF GUIDANCE ON MATTERS RELATING TO SCHOOL WORK

Criteria: *Relevance to the specific educational needs of the child
*Consistency
*Competence

Questions: 2, 3, 16, 21, 22, 23, 25

Rating Scale:

9 Consistent guidance and suggestions based on the knowledge of the specific strengths and weaknesses of the child in different school subjects. Consistent guidance and preparation during pre-school and early school years. Both parents very competent to give guidance.

8

7 Guidance based on the specific needs of the child for a certain interval. Consistent educational preparation and guidance during pre-school and early school years. One of the parents very competent to give guidance.

6

5 Guidance based on the general deficiency. Some preparation for school learning during pre-school period. More guidance in early school years. One of the parents fairly competent to give guidance.

4

3 Lack of clarity about the specific needs of the child. Some vague directions regarding school work on occasions. One of the parents only moderately competent to give guidance.

2

1 No guidance. No knowledge of the child's needs in scholastic progress. Little competence to give guidance.

## 3c. AVAILABILITY AND USE OF MATERIALS AND FACILITIES RELATED TO SCHOOL LEARNING

Criteria: *Selection of the material (e.g. Dictionary, Encyclopedia, Workbooks)
*Guidance for the use of the material and educational facilities

Questions: 11, 17, 18, 19, 20, 22

Rating Scale:

9 Selection of the most appropriate materials according to the educational level of the child. Abundant supply of the educational material. Appropriate and timely guidance for the use of the materials and facilities.

8

7 Selection of generally appropriate material according to the educational level of the child. Fairly abundant supply of the educational material. Appropriate and timely guidance for the use of the materials and facilities.

6

5 Availability of some educational material. Specific selection according to the child's level only in some cases. Some general guidance for the use of the material and facilities.

4

3 Very moderate supply of educational material. No specific selection according to the child's level. Only occasional guidance for the use of the material and facilities.

2

1 No availability of educational material in the home. No use of facilities available in the community, such as library.

4a. THE EXTENT AND CONTENT OF INDOOR ACTIVITIES OF THE FAMILY

Criteria: *Variety (Discussion, Undertaking a project, etc.)
*Frequency
*Educational value

Questions: 7, 10, 26, 27

Rating Scale:

9 A variety of activities in the home, having very high educational value are frequently undertaken by the family. Both parents participate.

8

7 A variety of activities in the home, having high educational value are often undertaken by the family. One or both parents pariticipate.

6

5 A moderate variety of activities in the home, having general educational value are sometimes undertaken by the family. One or both parents participate.

4

3 Only a very few number of family activities in the home have direct educational value. Often only one parent participates.

2

1 No family activities in the home. Or, the activities have hardly any direct educational value. Both parents are generally not available in any educational activities.

4b. THE EXTENT AND CONTENT OF OUTDOOR ACTIVITIES DURING WEEKENDS AND VACATIONS

Criteria: *Variety (e.g. visits to a museum or a zoo, traveling to historical places)
*Frequency
*Educational value

Questions: 6, 7, 8, 9, 27

Rating Scale:

9 A variety of child-centered activities outside the home having very high educational value, and frequently undertaken by the family. Both parents participate. Initiated and planned by different members of the family, instead of just one person.

8

7 A variety of outside activities having high educational value are often undertaken by the family. One or both parents participate. Generally planned by the parents.

6

5 A moderate variety of outside activities that have high educational value. Such activities are only sometimes undertaken by the family. One or both parents participate. Generally planned by any one of the parents.

4

3 A majority of outside activities having more recreational or other purposes, with incidental educational value. Or, very few outdoor activities. One or both parents participate. Generally planned by any one of the parents. Others follow.

2

1 Practically no outside activities of the family having educational purpose.

4c. USE OF TV AND SUCH OTHER MEDIA

Criteria: *Purpose of the use
*Extent of the use

Questions: 32, 33

Rating Scale:

9 Regular use for specifically educational purpose. Recreational value subsidiary. Frequent followup discussions.

8

7 Regular use for general educational and recreational purposes. Sometimes follow-up discussions.

6

5 Fairly regular use. Recreational purpose often more predominant than educational purpose. Occasionally followup discussions.

4

3 Not much use of TV and other media. Mostly recreational purpose when used. Hardly any followup discussions.

2

1 No use of any of these media.

## 4d. USE OF BOOKS, PERIODICAL LITERATURE, LIBRARY AND SUCH OTHER FACILITIES

Criteria: *Variety of material used by the family members (e.g. books, magazines, newspapers)
*Encouragement to the child for the use of such material (e.g. helping him to be a member of the library, suggesting him to trade reading material with friends)

Questions: 7, 10, 14, 31

Rating Scale:

9 Extensive reading of a variety of material by the family members. Great encouragement to the child for the same from his early age--even before he learned to read.

8

7 Fairly extensive reading of a good variety of material by the family members. Encouragement of the child for the same ever since he learned to read.

6

5 Moderate reading of some variety of material by the family members. Some encouragement to the child for the use of reading facilities--only lately.

4

3 Some reading infrequently done by the members of the family. Only occasional encouragement to the child for the use of reading facilities.

2

1 Hardly any reading done by the members of the family. No encouragement to the child also.

5a. NATURE AND QUALITY OF TOYS, GAMES, AND HOBBIES MADE AVAILABLE TO THE CHILD

Criteria: *Thought-provoking element in the toys, etc.
*Variety

Questions: 12, 13

Rating Scale:

9 A large variety of thought-provoking and educational toys, games, etc. provided to the child since early childhood. Great encouragement for the development of educationally oriented hobbies.

8

7 A fairly good variety of thought-provoking and educational toys, games, etc. provided to the child since early childhood. Some encouragement for the development of educationally oriented hobbies.

6

5 Some thought-provoking and educational toys, games, etc. available. No educationally oriented hobbies.

4

3 Only a few thought-provoking and educational toys, games, etc. available. No educationally oriented hobbies.

2

1 Hardly any thought-provoking and educational toys, games, etc. available. No educationally oriented hobbies.

## 5b. OPPORTUNITIES FOR THINKING AND IMAGINATION IN DAILY ACTIVITIES

Criteria: *Variety (e.g. use of power appliances, thought-provoking discussions, etc.)
*Level of complexity
*Extent of encouragement for independent thinking

Questions: 7, 15, 16, 25

Rating Scale:

9 Opportunities to work with a variety of complex appliances. Opportunities to listen to and participate in thought-provoking discussions. Great encouragement for independent thinking.

8

7 Opportunities to work with some variety of complex appliances. Some opportunities to listen to and participate in thought-provoking discussions. Some encouragement for independent thinking.

6

5 Opportunities to work with a few moderately complex appliances. Some opportunities to listen to thought-provoking discussions. Some encouragement for independent thinking.

4

3 Opportunities to work with one or two very moderately complex appliances. Opportunities to listen to thought-provoking discussions only occasional. Hardly any encouragement for independent thinking.

2

1 Practically no opportunities to work with any complex appliances. No opportunities to listen to any thought-provoking discussions. No encouragement for independent thinking.

6a. DEGREE OF STRUCTURE AND ROUTINE IN THE HOME MANAGEMENT

Criteria: *Planning and distribution of work
*Punctuality in following it

Questions: 57, 58, 59, 60

Rating Scale:

9 Well-planned home management. Distribution of work among the family members. Punctuality and discipline in following the plans.

8

7 Major duties distributed among the family members. Planning followed quite consistently.

6

5 Moderate planning. It is followed with only moderate regularity.

4

3 Some efforts made for planning and distribution of work which was not followed systematically.

2

1 No planning of household work.

6b. PREFERENCE FOR THE EDUCATIONAL ACTIVITIES OVER OTHER PLEASURABLE THINGS

Criteria: *Priority to educational activities attached by the parents
*Continuity of academic activities (e.g. taking courses after completing formal education)

Questions: 53, 56, 57, 61, 62, 63

Rating Scale:

9 Very high priority attached by the parents to studies and other educational activities. Great encouragement to sacrifice pleasurable activities for completing school work. Both parents continued studies voluntarily after completing formal education.

8

7 Educational activities and studies stand among the activities of high priority. Encouragement to complete school work before undertaking other activities. One or both parents continued studies voluntarily after completing formal education.

6

5 Educational activities and studies moderately high in priority. A few others higher in priority. One of the parents continued studies either voluntarily or as occupational requirement after completing formal education.

4

3 Other activities higher in priority than educational activities and studies. No specific habit formation of completing school work before undertaking other activities emphasized. One of the parents continued studies after completing formal education as an occupational requirement.

2

1 No emphasis attached to scholastic studies by the parents. It is often made subsidiary to other activities. Parents did not continue any studies after completing their formal education.

# APPENDIX C

## LETTER TO PARENTS

Dear

As a doctoral student at the University of the Pacific, I am presently conducting a survey as part of my research project. The survey concerns reading achievement of Filipino American third and fifth graders in the Stockton Unified School District. I would like to find out what home factors are related to reading achievement.

Similar studies have been done before but none have been conducted in the Stockton area and none involving Filipino American children. Information such as that furnished by this survey can help schools to better understand the children they are serving and to plan educational programs that can best serve the needs of students in this particular community.

I hope you will give me your permission to be interviewed as well as to obtain from the Stockton Unified School District the reading test scores to be used in this study. All information given will be converted into statistical (numerical) data and will be kept in strict confidence. Test scores will not be revealed to anyone.

For your convenience a permission slip and a stamped envelope are enclosed. I shall be calling you to set up the interview appointment. I hope to be visiting and talking with you soon.

MARAMING SALAMAT,

EVELYN V. GUIANG

# APPENDIX D

## PARENTS' INFORMATION SHEET AND CONSENT FORM

PRELIMINARY INFORMATION BLANK

| Child's Name | Birth Place | Birth Date |
|---|---|---|

| Grade | School this year | + School Last year |
|---|---|---|

| Father's Name | Occupation | Birth Place |
|---|---|---|

| Mother's Name | Occupation | Birth Place |
|---|---|---|

| Year family arrived from the Philippines (if applicable) | Language(s) Spoken in the Home |
|---|---|

| Preferred Time for Interview (State day and hour) | Phone Number |
|---|---|

---

The Coordinator
Research and Evaluation Office
Stockton Unified School District
701 N. Madison, Stockton

MADAM:

This is to give our consent to Miss Evelyn Guiang to:

a) obtain the MAT reading score of my child _____ last year from the school district records, and

b) conduct an interview with us regarding home factors that could be related to school achievement.

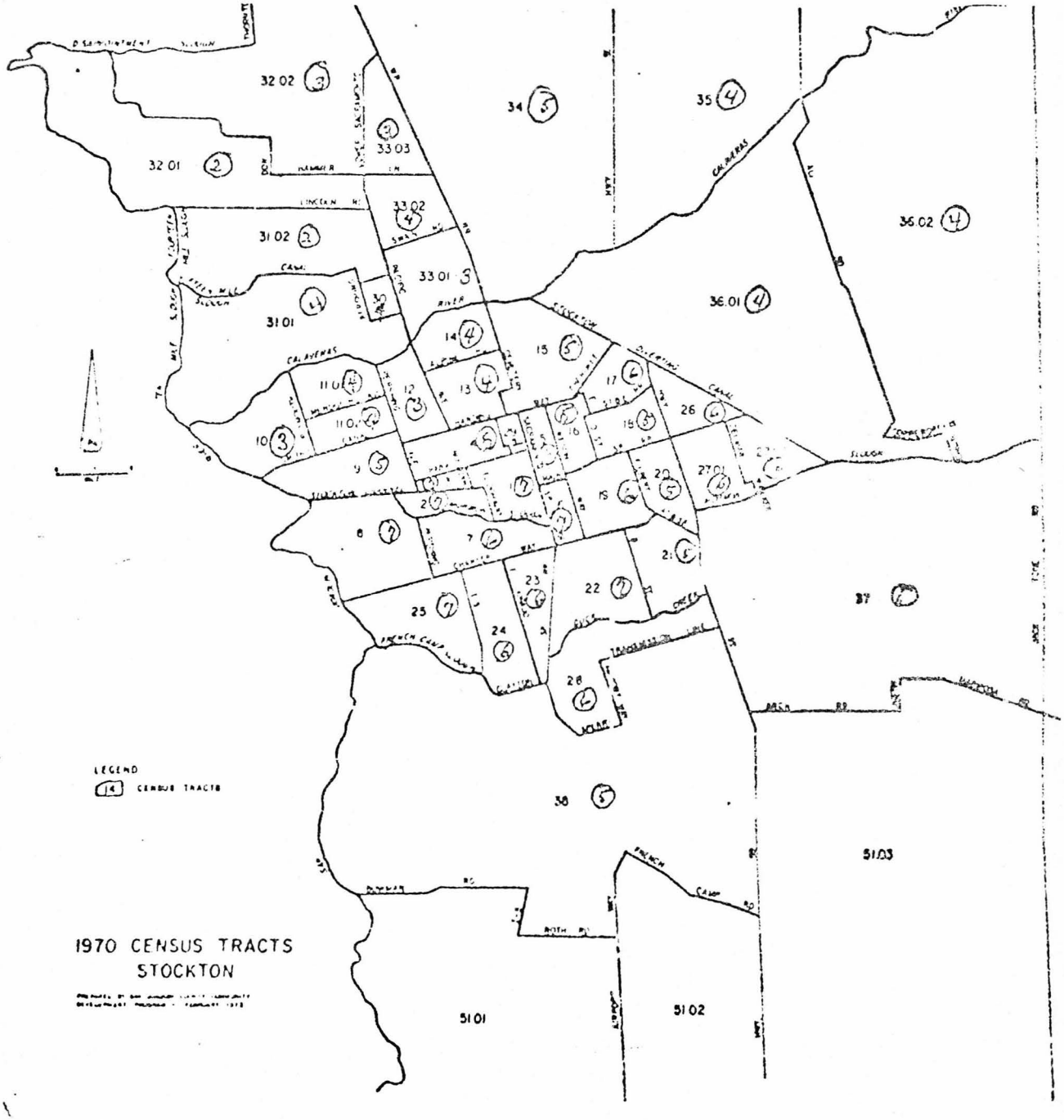
Very truly yours,

_____
Parent(s)

_____
ADDRESS

# APPENDIX E

## CITY OF STOCKTON CENSUS TRACTS, 1970


LEGEND
CENSUS TRACTS
1970 CENSUS TRACTS
STOCKTON
32.02
32.01
33.03
33.02
31.02
33.01
31.01
34
35
36.02
36.01
37
38
51.03
51.01
51.02

# APPENDIX F

## REVISED SCALE FOR RATING OCCUPATION

REVISED SCALE FOR RATING OCCUPATION

| Rating Assigned to Occupation | Professionals | Proprietors and Managers | Business Men | Clerks and Kindred Workers, Etc. | Manual Workers | Protective and Service Workers | Farmers |
|---|---|---|---|---|---|---|---|
| 1 | Lawyers, doctors, dentists, engineers, judges, high-school superintendents, veterinarians, ministers (graduated from divinity school), chemists, etc. with post-graduate training, architects | Businesses valued at $75,000 and over | Regional and divisional managers of large financial and industrial enterprises | Certified Public Accountants | | | Gentleman farmers |
| 2 | High-school teachers, trained nurses, chiropodists, chiropractors, undertakers, ministers (some training), newspaper editors, librarians (graduate) | Businesses valued at $20,000 to $75,000 | Assistant managers and office and department managers of large businesses, assistants to executives, etc. | Accountants, salesmen of real estate, of insurance, postmasters | | | Large farm owners, farm owners |
| 3 | Social workers, grade school teachers, optometrists, librarians (not graduate), undertaker's assistants, ministers (no training) | Businesses valued at $5,000 to $20,000 | All minor officials of businesses | Auto salesmen, bank clerks and tellers, postal clerks, secretaries to executives, supervisors of railroad, telephone etc., justices of the peace | Contractors | | |
| 4 | | Businesses valued at $2,000 to $5,000 | | Stenographers, bookkeepers, rural mail clerks, railroad ticket agents, sales people in dry goods store, etc. | Factory foremen, electricians, plumbers, carpenters, watchmakers (own business) | Dry cleaners, butchers, sheriffs, railroad engineers and conductors | |
| 5 | | Businesses valued at $500 to $2,000 | | Dime store clerks, hardware salesmen, beauty operators, telephone operators | Carpenters, plumbers, electricians (apprentice), timekeepers, linemen, telephone or telegraph, radio repairmen, medium-skill workers | Barbers, firemen, butcher's apprentices, practical nurses, policemen, seamstresses, cooks in restaurant, bartenders | Tenant farmers |
| 6 | | Businesses valued at less than $500 | | | Moulders, semi-skilled workers, assistants to carpenter, etc. | Baggage men, night policemen and watchmen, taxi and truck drivers, gas station attendants, waitresses in restaurant | Small tenant farmers |
| 7 | | | | | Heavy labor, migrant work, odd-job men, miners | Janitors, scrubwomen, newsboys | Migrant farm laborers |

# APPENDIX G

## INTERCORRELATION MATRIX FOR ENVIRONMENTAL PROCESS VARIABLES, DEMOGRAPHIC VARIABLES, AND READING ACHIEVEMENT - Grade 3

APPENDIX G

Intercorrelation Matrix for Environmental Process Variables, Demographic Variables, and Reading Achievement - Grade 3

| Variables | 1 | 1a | 1b | 1c | 1d | 1e | 1f | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Index of Educational Environment (IEE) | | | | | | | | | | | |
| 1a. Achievement Press | .95 | | | | | | | | | | |
| 1b. Language Models | .87 | .81 | | | | | | | | | |
| 1c. Academic Guidance | .87 | .76 | .74 | | | | | | | | |
| 1d. Activeness in the Family | .94 | .86 | .76 | .76 | | | | | | | |
| 1e. Intellectuality in the Home | .89 | .76 | .72 | .80 | .86 | | | | | | |
| 1f. Work Habits of the Family | .84 | .73 | .59 | .66 | .76 | .85 | | | | | |
| 2. SES | -.61 | -.67 | -.64 | -.48 | -.53 | -.44 | -.37 | | | | |
| 3. PEL | .38 | .57 | .60 | .52 | .50 | .60 | .42 | -.47 | | | |
| 4. PGS | .25 | .13 | .44 | .14 | .23 | .32 | .21 | -.13 | .30 | | |
| 5. Sex | .07 | .15 | .04 | .06 | .01 | .01 | .21 | -.12 | .04 | -.002 | |
| 6. Reading Achievement | .57 | .52 | .35 | .49 | .56 | .53 | .62 | -.03 | .05 | .10 | .11 |

# APPENDIX H

## INTERCORRELATION MATRIX FOR ENVIRONMENTAL PROCESS VARIABLES, DEMOGRAPHIC VARIABLES, AND READING ACHIEVEMENT - Grade 5

APPENDIX H

Intercorrelation Matrix for Environmental Process Variables, Demographic Variables, and Reading Achievement - Grade 5

| | Variables | 1 | 1a | 1b | 1c | 1d | 1e | 1f | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Index of Educational Environment (IEE) | | | | | | | | | | | |
| 1a. | Achievement Press | .94 | | | | | | | | | | |
| 1b. | Language Models | .91 | .82 | | | | | | | | | |
| 1c. | Academic Guidance | .93 | .84 | .92 | | | | | | | | |
| 1d. | Activeness in the Family | .93 | .81 | .83 | .85 | | | | | | | |
| 1e. | Intellectuality in the Home | .81 | .69 | .66 | .68 | .78 | | | | | | |
| 1f. | Work Habits of the Family | .86 | .72 | .73 | .77 | .82 | .84 | | | | | |
| 2. | SES | -.86 | -.72 | -.64 | -.66 | -.56 | -.54 | -.46 | | | | |
| 3. | PEL | .59 | .76 | .75 | .77 | .68 | .44 | .54 | -.51 | | | |
| 4. | PGS | .04 | .01 | .13 | .13 | .03 | .002 | .03 | -.07 | .10 | | |
| 5. | Sex | .33 | .26 | .28 | .28 | .34 | .37 | .31 | .10 | .14 | .09 | |
| 6. | Reading Achievement | .77 | .70 | .58 | .68 | .72 | .77 | .80 | -.40 | .51 | -.07 | .33 |